

# SUPPLEMENT.

## The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2375.—Vol. LI.

LONDON, SATURDAY, FEBRUARY 26, 1881.

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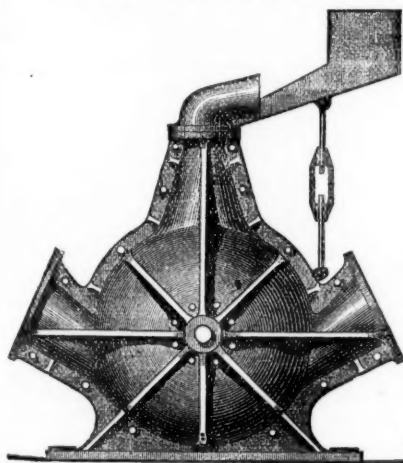
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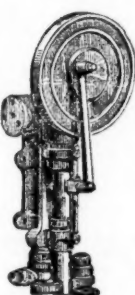
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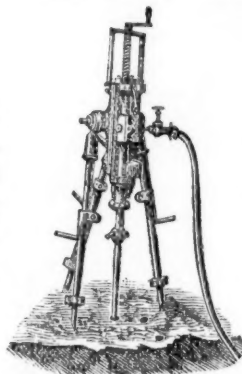
THE PATENT

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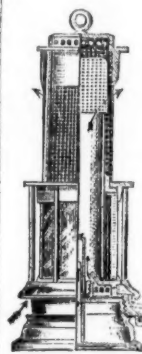
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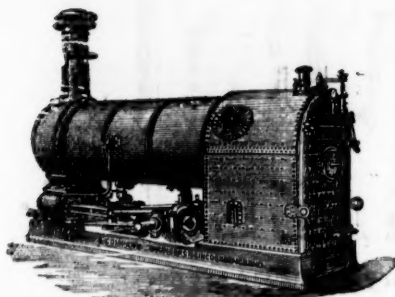
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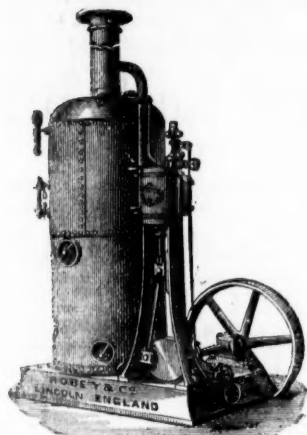
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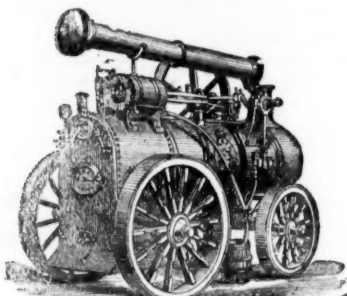
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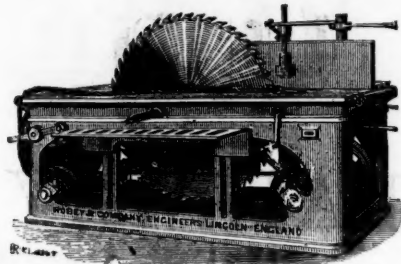
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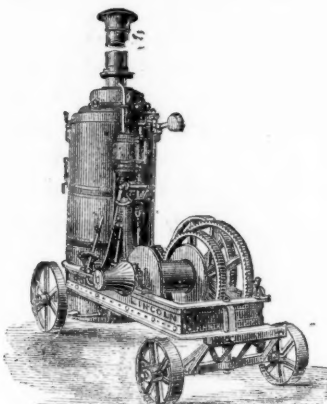
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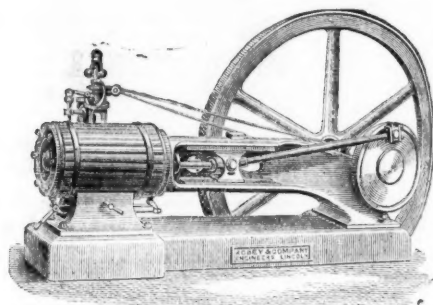
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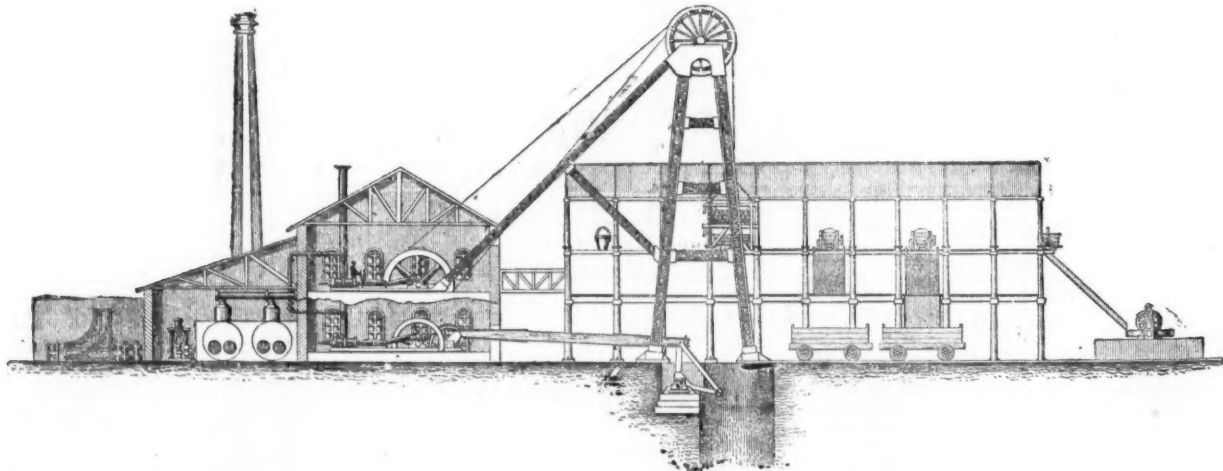
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## Original Correspondence.

## THE ROYAL SCHOOL OF MINES.

SIR,—The letter from a working man which you have published, concerning the transference of one of the courses of lectures to working men from the Museum in Jermyn-street to South Kensington well deserves the attention of Her Majesty's Government. This has been done previously with other courses, but uniformly with the effect of greatly reducing the audience in number; which will not appear surprising when it is known that many who attend are working men residing in Clerkenwell and the vicinity. The Education Department is evidently determined on a scheme of concentration at South Kensington, not only without the consent of Parliament, but in spite of pledges to the contrary which it gave to both Houses some years ago. The action of the Department in this and other matters, involving considerable grants of public money, is a proper subject of enquiry by a Committee of the House of Commons. To such a tribunal I should be prepared to communicate facts of a somewhat startling character, showing the necessity of reform, at least in the science branch of the Science and Art Department—facts which I feel confident are unknown to the Lords of the Committee of Council on Education.

JOHN PERCY, M.D., F.R.S.,

Formerly, for 28 years, Lecturer on Metallurgy at the  
House of Commons, Feb. 18. Royal School of Mines.

## GOLD AND GOLD MINING.

SIR,—The uses and particular characteristics of this metal are so well known that it would be without interest to enter upon them here. At the same time the varying modes of its occurrence so widely different may claim some notice. The amount of gold mined in Europe from the earliest times is so small in comparison with the large quantities mined in Australia, California, Mexico, and South America, that European gold may almost be passed over. The yield of gold in the Ural mountains is very poor, and could not be wrought except at a very low rate of labour. The industry of gold mining has received an immense development by the use of modern machinery, and in fact few auriferous lodes would pay without the present stamping mill; even the richest would be at great disadvantage.

The greatest quantities of this metal have been found in alluvial deposits, and much of the richest has been found near the surface or at an inconsiderable depth. This has been the case in Australia and California, where the river and creek beds have yielded a large portion of the precious metal. Those river beds in some cases lie at a great depth and in most unlikely places, showing that since the gold has been deposited the surface configuration has undergone a complete transformation. Many instances of this occur in Australia (where those deep runs are called leads), and where it frequently happens they are covered by a varying depth of basaltic rock. On the Lachlan gold fields, New South Wales, where the land is very level for many miles, a very rich lead of alluvial gold was found in a deep old ravine or valley varying in depth from 80 to 300 ft. In this same locality, notwithstanding a great amount of perseverance and skill, one shaft on a supposed deep run or lead was never, in digger's parlance, bottomed. This shaft was about 500 ft. through soft clay, and eventually struck heavy water, when it was reluctantly abandoned. The sinking of this shaft was rendered most difficult by the immense pressure on the timbers after 200 or 300 ft. It is generally believed by miners that the most permanent and best of those leads follow a north and south course, and it is extremely probable that this gold was thrown out from a lode running in a north and south course, being afterwards washed into the lowest part. The alluvial gold in these leads, like other alluvial, is associated with water-worn gravel, and a stiff clay or decomposed granite. This clay, when compact, forms the bed on which the gold lies. In shallower ground this bed is often slate or a soft granite. A magnesian limestone has also formed a bed for alluvial deposits, but this is exceptional. The gold in those leads, and all alluvial, has peculiar characters, by which anyone skilled and acquainted with the different localities may, on seeing a sample of the gold, state the spot with tolerable certainty from whence it came. The forms taken by gold of different localities vary much, in shape, size, and also in colour; sometimes like fish scales, rounded or flat nuggets, and often coated with iron. The colour also varies from light to a greenish yellow.

In the great gold producing countries those alluvial deposits are wrought by associations of miners, who find their own capital, and this seems the most successful, as public companies have been in most cases a failure. In a few cases where those mines require a large outlay they have been formed into public companies, who have been fairly successful, but in this case many of the workers are shareholders. A curious feature of alluvial deposits is that they sometimes occur on hills and mountains of great height, often on terraces from 100 to 300 ft. from the top of the hill, and frequently covered by basaltic rock. Those hills in many cases pay well, and the richest part is usually a short distance from the entrance of the drive or adit. Here also the gold is associated with water-worn quartz. The origin of those terrace deposits is difficult to account for, but it seems evident they must have at some time formed a river or creek bed, and that the surface has been altered by volcanic action or by some vast rivers.

Passing on to quartz, the principal matrix of gold, we have also great varieties in its modes of occurrence, and also find the gold in different parts and forms. There are also great differences, both in the nature of the matrix and in the form and quality of the metal. Here, again, as in alluvial mining, a lode which runs north and south is looked upon as a permanent lode, but this is no criterion that the lode will contain a permanent supply of metal. In some districts of Australia the north and south lodes pay, and in others the east and west lodes are the only payable. It is rare that in one district lodes running in both directions pay. The east and west lodes seem to be often spurs from some main lode are often rich on the surface, but rarely last to any depth. They also as a rule dip at a greater angle, and are most difficult to work on this account. In some districts where those lodes are nearly vertical they have paid well, but in many districts, notably slate country, they are often contorted, varying in width and irregular, and seldom pay to work to any depth. The north and south lodes on the contrary vary much less, are generally a stronger lode, have regular, clean, often soft walls, and there is little chance of losing the lode, although it may vary in its yield. But it is almost impossible to lay down any absolute rule for guidance, each miner must judge by his own experience, and the quality of the lode may often be predicted by seemingly trifling characteristics. It has often been held by inexperienced persons that a lode in which little or no gold may be seen may hold gold to a payable extent; this is of very rare occurrence, and any person experienced at finding gold in quartz will readily discover it in any payable lode. There is at the same time quartz which returns much better than it appears to the eye. This on examination is readily accounted for. Gold is principally disseminated in quartz in either of four forms—arborescent, granular, in thin plates or scales, or in a finely divided state in the quartz or sulphides. The first of those forms is not common, except in very rich lodes, granular, or thin plates, being most common. Some of the granular samples of gold under a powerful glass exhibit a spongy open structure, and from this the returns are seldom up to expectation. The granular samples of the contrary description, which exhibit a solid round or cubical form exceed first expectations. Samples of quartz showing thin plates or scales are very deceptive, and seldom yield well. It is generally believed by experienced quartz miners that gold in a finely divided state in the quartz is most reliable as being more equally disseminated through the lode. The gold contained in the various sulphides is of this quality, and is generally difficult to find unless by crushing, roasting, or the use of acids, when, if skilfully performed, the metal can easily be seen if existing in any paying quantity.

It has in Australia been a common complaint that auriferous lodes do not go down; that is to say, do not last payable to any depth, the fact being that those lodes with few exceptions are richest on the surface, or a few feet below. The yield of gold, as a rule, steadily decreases with depth, while at the same time the expenses are in-

creased by the rock becoming harder. It is without doubt that in Australia of the lodes which are payable at the surface not more than 1 or 2 per cent. are ever carried down to 200 ft., while the number which reach 500 ft. is very small indeed. From the last returns of Victoria, which has now for 25 years been an extensive quartz mining colony, and in which many thousands of lodes have been wrought, only 19 shafts are over 1000 ft. In conclusion, the working of auriferous lodes to those who have not had previous experience is extremely hazardous, and even with experience requires an amount of caution not necessary in lodes of other metals.

A. FORSYTH,  
Reduction Officer.

## ALMADA AND TIRITO SILVER MINES.

SIR,—Permit me to draw the attention of the readers of the *Mining Journal*, and through them that of the mining and financial world generally, to the present position and prospects of the above company. The following table shows its progress towards a dividend, the profits being net, after everything (including interest on debentures) is charged to revenue:—

Half-year ending	Profit.	Loss.
Dec. 31, 1878	—	£3412
June 30, 1879	£ 87	—
Dec. 31, 1879	237	—
June 30, 1880	1083	—
Dec. 31, 1880 (probable)	2500	—

I expect this year our profits will be very substantial, and so does our able manager, Mr. Clemes, for he anticipates making a profit equal to 4 per cent. on the share capital up to June 30 next, provided the mines remain in their present state. His and other later reports say the mining prospects are daily improving, and I fully expect the above estimate will be more than realised, and it must be remembered that Mr. Clemes is both a skilful practical miner and an able metallurgist, and withal, I believe, honest. He has had much experience, and has long since passed the sanguine stage of mining experience. His statement and some other matters do not appear in your report of the half-yearly meeting in the issue of the 19th inst.

The capital is 130,000*l.*, in shares of 1*l.*, and 15,230*l.* per cent. debentures, falling due on June 30 next, all of which will certainly be taken up by the shareholders, who have as security, as was truly said at the meeting, a magnificent property, and the security is most ample. In former times of great depression (1876-1880) the interest on these debentures was always most regularly paid, and it is now as safe as some railway debenture interest.

There is a large dump pile of black ore almost untouched. This is most valuable for mixing, averaging on assay 19 ozs. per ton, and consists of some thousands of tons, and can be treated on the spot; but only 48 tons were taken from it last half-year. Mr. Clemes estimates the amount of black ore now left in the upper portion of the Mina Grande, where he is working, at 100,000 tons, and in a recent telegram says—"Reserves largely increased."

The profit last half-year was obtained from 5194 tons of ore extracted; but we have now increased the appliances for treating the black ores (on which we now chiefly depend), and will have an increased output, and we are about adding other furnaces, and proceeding to vigorously open up the mines. It must be remembered that Señor Almada, the former owner, could not profitably treat the black ores, but relied entirely on the green, which form about one-fourth of our present output, and left the black ores, of which there is an enormous quantity, quite untouched. Mr. Clemes has now grappled with and met the whole difficulty, and makes the black ores almost as profitable as the green, and the last reports announce new fields of green ore.

The mines are now selling at 70,000*l.*, but they are worth more than double that, and are much more valuable now than at any time since 1876, when they paid their last dividend of 1*s.* per share. If the discounting of future prospects, which regulates the prices of most securities, was applied to this mine the 1*l.* shares (fully paid) would stand at par.

The silver market is very firm, and more likely to rise than fall, and many long-headed people expect the coming monetary conference will result in permanently enhancing the value of silver, as both France, Germany, and America may adopt a bi-metallic currency, and Indian trade and finance would be greatly stimulated. This is quite on the cards, and if it occurs and the mines merely keep in their present position, we shall pay a good dividend; but if the mines improve, as I fully expect with good reason that they will, we shall see Almadas quoted at a very substantial and fully justified premium within eight months.

I must not take up more space now, but may add that our Tirito Mine, which flooded after the disastrous fire in 1876, is now about being drained and re-worked. Previous to the fire the mine had several proved lodes, increasing in richness in depth, and averaging 126 ozs. of silver per ton.

A LARGE SHAREHOLDER.

Dublin, Feb. 21.

## ANGLO-BRAZILIAN GOLD MINING ENTERPRISE.

SIR,—One of your frequent correspondents, Mr. John Lean, has had something to say about the *Mining Journal* being crowded with letters from people who did not know of what they were writing. He gets in some pretty stiff articles by way of pushing "the late Descuberto, now the Brazilian Gold Mines (Limited)," before your readers. He says he had time to visit and "become familiar with an infinitude of gold mines and alluvial deposits" during his five years and few months service in the employ of the Gongo Soco Company 46 years ago. The late Descuberto, now the Brazilian Mines, to which he begs to call particular attention, are situated in the midst of the richest known gold region and the centre of the district, &c.

Mr. Lean certainly amuses the readers of the *Journal* who are here in the district, who, while they do not dispute his tale of great riches, think that after doing all the gold mines of this extensive province 46 years ago, he must have taken a long sleep, from which now he arouses himself to help put up the Brazilian mines shares. Mr. Lean should, however, be careful how he criticises letters written from the district of modern date, which deal in facts rather than traditions. Mines cannot pay dividends on traditions, official documents, the opinions of a person who saw them 46 years ago, nor on most positive assurances that all is going well on exact information had at the office. I am aware that your readers are accustomed to glowing articles, promises of dividends, and splendid results. I know that shareholders seem to think it high treason to write any news but good news, and if your readers are offended at what I state as facts I advise them to investigate a little before complaining of the injury. I shall deal with facts, they will "bull" the good things and "bear" the bad ones. You have not, within my recollection, had a more independent correspondent in Brazil than myself.

Returning from Sabara last week, I passed through Raposos, Morro Velho, Gongo, St. Joao do Morro Grande, Pitangui, Morro St. Anna, and Passagem, I heard much of the new hoisting works of Morro Velho, but for exact information, and fearing that you may be complained of should you publish my remarks, I refer your readers to the office of the company in London. At Morro Grande I found Mr. Hendeborn, lately chief officer of the St. John del Rey Reduction Department, engaged in an examination of the property known as the Corrego San Miguel. Work has been going on here some four months, and a rich line of jacotinga has been uncovered. I saw fine samples of canga, and a quantity of coarse gold—the last was taken from the line. The situation of the property is good. An abundant supply of water runs over the ground at great elevation, and the estate is well timbered. The traditions are immense, and it is but two or three miles from rich Gongo Soco. The work and the examination was ordered by a French capitalist, who has bonded the property, and Mr. Hendeborn says he must ignore tradition, and report on the ground as he finds it. At Barra a mill is pounding away on some very rich stuff, of which there seems to be a great supply; about 10 octavos per ton was the result as I saw it. A Brazilian works the mine and mill a few hours each day. Pitangui is preparing for grander work, and the prospects are good. Morro St. Anna, slow, but everything connected with the new works for unwatering the mine is first-class. The shareholders must be patient. The gold is there—I have seen it—and a few months more should

find all the new machinery complete. The Passagem Mines are not yet opened. Timber and skilled labour were difficult to obtain, but a couple of dozen carpenters and smiths, with a number of miners, are now employed, and they hope to see the bottom of the mines by March next. This property was once known as the Anglo-Brazilian Company, as was also Pitangui; they failed under a most inefficient and extravagant management. The new proprietors, a private company, are putting in labour-saving machinery, and it is intended to thoroughly exploit the mines by sinking and cross-cutting. The working shaft is re-timbered, and a large water-wheel designed to drive the pump and hoisting works is in place. In the upper dry part of the mine is a large quantity of low grade ore, which, it is claimed, will pay a small profit. This enterprise has the good wishes of all people hereabouts; it puts a little life into this political and religious community. The mining college of this city get on well; all the professors are French. The students took a hand at practical work. By the aid of some small capitalists they bought a mine, put up a mill, and gave a dinner—the dinner was the heaviest part of the operation—it broke the company; they are out of money, and they have also lost courage. The Rio journals say that the Emperor will surely visit Ouro Preto in April, and that he will spend the passion week with his friend the Bishop of Minas, at the Episcopal Palace in Marianna.—Ouro Preto, Brazil, Jan. 15. MINAS.

## NOUVEAU MONDE GOLD MINING COMPANY.

SIR,—Shareholders in the above mine will, I feel convinced, be glad to see the following announcement, which was posted in the Stock Exchange last week, but which I have not seen in any paper:—

TO THE SECRETARY OF THE STOCK EXCHANGE.

SIR,—For the information of the members of the Stock Exchange we beg to inform you that, the transfer of the Neuapal properties having been completed, the Government title deeds have arrived, and are now in London. Mr. Bickford Anthony, the engineer selected by Messrs. John Taylor and Sons for the management of the mines, has left for Venezuela by the steamer Minho, and the required funds for the continuation of active and productive works have been remitted to Venezuela through the Colonial Bank.

F. S. GRANT.

Since the above has appeared I have had an interview with one of the directors, who assures me that we may reasonably expect to have a dividend in three or four months.

BONDHOLDER.

Chiswick, Feb. 21.

## RUBY AND DUNDERBERG COMPANY.

SIR,—The letter in last week's *Journal* appearing under the sobriquet of "One Largely Interested," reminds me of a late member of the Stock Exchange, who applying to be admitted to a meeting of a certain well known railway company, was refused entrance by the door-keeper on the ground that his name did not appear on the register of shareholders, and therefore he could not be interested in the company's proceedings, to which objection the gentleman rejoined indignantly that "he was interested, and largely interested," as a bear.

The puerile attempts lately made to injure the Ruby Company's property have been of the most transparent kind—*verb. sup.*

ANOTHER LARGELY INTERESTED.

## INDIAN MAMMOTH GOLD MINING COMPANY.

SIR,—In December I applied to the secretary of the Indian Mammoth Gold Mining Company to return the money I had paid on my shares. I received the following in reply:—

I am in receipt of your favour of yesterday's date (Dec. 17), and in reply beg to state that my directors intend with as little delay as is compatible with due legal business formality to return any money to dissatisfied shareholders that they have paid.—A. C. DUVAL, Secretary.

Not receiving any circular, and thinking the delay incompatible with business, I wrote again, and received the subjoined interesting statement:—

I find I wrote to you on Dec. 18, as quoted by you; but legal advice has caused the directors to reconsider the step it was their intention to pursue.—A. C. DUVAL, Secretary.

With the first letter in my possession I shall not sell my shares at a discount, and I would recommend other shareholders to do the same.

A. G.

## NEW SOUTH WALES RAILWAY REPORT, 1879.

SIR,—As, unlike many other British colonies, the greater bulk of our loans is for railway purposes, and, therefore, as far as the public creditor is concerned, a security which must increase in value as the population naturally increases, the following condensed items from the annual report may be of interest to your readers:—

The annual report of the Commissioner for Railways was laid before Parliament on Friday evening showing the transactions of the Railway Department for the year 1879. The document, which was ordered to be printed, is a naturally an exceedingly lengthy one, and we extract its more notable items. The amount of loan authorised at the end of 1878 was shown to have been 12,259,161*l.*, of which sum 9,057,304*l.* had been raised. The further sum of 3,202,000*l.* was voted in 1879, increasing the railway capital to 15,461,161*l.* The total amount of the debentures issued at the close of 1879 was 11,610,600*l.*, leaving a balance of 6,553,561*l.* still to be raised. The railway capital bears interest as follows:—7,113,800*l.* at 5 per cent., annual interest 355,540*l.*; 4,499,800 at 4 per cent., annual interest 179,920*l.*; 6,553,561*l.* at 4 per cent., still to be raised, annual interest 262,142*l.* The average interest is, therefore, 4.39 per cent. The capital raised by loan for railway purposes at the close of 1879 was 11,610,600*l.*, the annual interest upon which is 535,532*l.* The net earnings of the railways for the year were 347,855*l.*, which, deducted from the annual interest, would leave a balance of 137,323*l.* to be paid from the general revenue. Only six months' interest was due for 1879 upon the loan raised in that year, so that the contribution from the general revenue for all railway purposes was not more than 137,420*l.*; the loan fund has contributed 9,336,377*l.* for the construction and equipment of lines open for traffic, and the interest paid in 1879 upon this amount exceeded the net revenue of the railways by the sum of 103,944*l.* At the close of 1879 there had been expended on lines open for traffic 10,406,495*l.*, and on lines in course of construction 1,004,854*l.*; in all 11,411,349*l.*, of which amount the sum 1,133,498*l.* was expended in the year 1879. The gross earnings in 1879 were 852,368*l.*; the working expenses 504,513*l.* leaving the net earnings 347,855*l.* Of the gross earnings the sum of 319,950*l.* was derived from coaching traffic, and 632,416*l.* from goods traffic; the proportion of the latter to the former was 68.40 to 31.60. A summary of the transactions for the year states that the expenditure for construction was 11,411,349*l.*, upon which the interest was 471,627*l.*, or 4.13 per cent. The capital expended on lines opened for traffic was 10,406,495*l.*, upon which the interest 4.38 per cent. The net earnings were 347,855*l.*, yielding 3.05 per cent. to the total capital expenditure, and 3.34 per cent. to the capital expended on lines open for traffic. The interest paid by Government was, therefore, 1.08 and 0.99 per cent. In excess of the percentage of net earnings to total capital, and to capital productively employed respectively. At the close of the year 73½ miles of line were open for traffic, and 286 miles were in the course of construction. The rolling stock consisted of 177 locomotives, 144 coaching, and 3866 goods vehicles. The cost of the railway materials, in the conveyance of which 82 vessels were employed, amounted to 228,132*l.*, and the freight and insurance to 22,418*l.*, making a total of 250,550*l.* During the year 46,697 passenger trains and 28,700 goods trains were run a distance of 2,932,463 miles. The earnings amounted to 952,368*l.*, and the working expenditure to 604,513*l.*, 63.49 per cent. of the earnings. The number of passengers who travelled was 4,402,806, of whom 1,177,211 were first-class, 3,225,595 were second class; included in these figures are 10,400 season ticket holders, representing 1,326,373 journeys. The proportion percentage of these classes is for first-class passengers 15.55, second-class, 54.31, and for season-ticket holders 30.14. The merchandise traffic consisted of 714,319 head of live stock, 174,520 bales of wool, 1,216,933 tons of minerals, and 444,304 tons of general goods. The average earnings per mile open were 1343*l.*, the average expenditure was 853*l.*, the net earnings were 490*l.* The average earnings per train mile were 77.94*l.*, the expenses 49.49*l.*, and the net earnings 28.45*l.* There was an increase of 180,566 in the number of first-class passengers, of 312,837 second-class, and 203,470 in the journeys made by season-ticket holders, an increase in the receipts of 13,642*l.* from coaching traffic, and of 35,735*l.* from goods traffic. The total increase, therefore, in the receipts is the very satisfactory sum of 49,377*l.* A mass of other information is given, but it is chiefly statistical and of a routine character.

Our Commissioner for Railways (Mr. C. A. Goodchap) is a man with a "head on his shoulders," and exceptionally well adapted for his work, and by a fair and just increase here and a judicious adjustment there would and could easily make the railways, as a whole, work up to a profit, even beyond the interest, and this without any general hardship or unduly depressing any special industry; but as is the case, I suppose, with all other snob governed countries (which democracy practically means), his hands are more or less tied by the exigencies of party Government, which forms the Ministry of the day, to make concessions—at any rate up to certain limits, one of the present popular ideas being that cheap rates and low freights foster the real interests of the colony, so much so that the real gain is greater to it than the margin of loss between the net profit and the net interest paid on the loans.

This season we just begun to tap on "back country" (for the first time), and most of our wool that previously went via Melbourne or Adelaide came through to Sydney, and will doubtless make a good addition to our returns for 1880, and will, of course, be an increasing item year by year, while the meat export trade will also lead to a great increase of "up country killed" carcass traffic, so that with that growing item of revenue Mr. Goodchap, if left untrammelled,



may possibly be enabled to show a clear balance-sheet within the next year or two.—*Sydney.* R. D. ADAMS.

#### FROM FAR OFF LAKE SUPERIOR.

SIR,—Noticing in recent *Mining Journals* that considerable attention is being paid towards the mineral-bearing portions of India, it occurred to me that perhaps a few lines in regard to this region of country might prove interesting and possibly instructive, as I doubt if many of your readers are aware of the vast expanse of wealth lying dormant in this part of Her Majesty's possessions.

The entire north shore of Lake Superior, extending in length about 300 miles, and in breadth as far as the confines of Hudson Bay, is one enormous field of hidden wealth, embracing within its area mines of gold, silver, lead, copper, iron, tin, graphite, and numerous other valuable properties. On the south shore of the same lake are the richest copper districts of the world—the famous Calumet and Hecla Copper Mine, doubtless being well known, is only one of a large number of properties belonging to Uncle Sam. It is, however, to the lands within the domain of the British Crown I shall at present refer.

First in richness comes the silver mine known as Silver Islet. A small island in the Lake, distant about half a mile from the shore, it originally covered an area of less than 100 square feet. It has produced already over \$3,000,000 worth of silver, and there is now in sight about \$60,000,000. How much more it would be hard to say, as the end is not reached, and probably will not be for many years. This was bought by Americans for \$200,000, and see what their enterprise has taken from the wealth of British territory, nor is this all. The Americans are here purchasing other properties, which are likely to prove equally as valuable, and which ought to be in the possession of British capitalists. Another mine, known as the Duncan, is owned and worked principally by American money, and I have no doubt that ere this reaches you the miners will be taking out valuable silver from this mine also, as the diamond drill has proved its existence.

The richest galena mine on this continent is near the eastern end of Lake Superior, and is known as the Victoria Mine. Here again has the enterprise of Americans resulted in a loss of wealth to our own country.

There is now forming in the United States one company, with a capital stock of \$2,000,000, for the purpose of working gold mines; and another company has been formed in Boston, and nearly all the stock taken there, for working another gold mine. Both of these gold properties are very rich, and are in Canadian territory.

Gold is found in many parts of the district, and for want of capital is not worked. Silver is plentiful also, but unless we succumb to our American friends' terms we are not able to do anything.

The capitalists of Canada, with few exceptions, appear to regard the building of railroads the most profitable enterprise for the use of their money, and there is not sufficient in a new country like this to develop all its resources; hence the wealth of our neighbours is called into requisition, but how much better it would be if our own countrymen could be as enterprising, and save to our own country the wealth that is rapidly flowing into another.

At the present time there are opportunities offered for investing in valuable property which will not long remain, and if some of the capital that is seeking profitable enterprises could be turned in this direction it would be beneficial to the capitalists and the country.

I shall in a future letter refer to the progress that is being made towards the development of the richest mineral-bearing region on the continent, so acknowledged by experts who have visited it.

P.A. Landing, L.S., Canada, Jan. 16.

CHAS. A. EVERITT.

#### ANGLO-AMERICAN MINING.

SIR,—I have stated in previous letters that a change as regards the promotion and working of mining companies was now going on in the United States. In proof of my assertion I wish to give the readers of the *Mining Journal* a few instances of the wide-spread manifestation of American public opinion, that mining should be so conducted as to generally yield a profit to those persons who supply the capital to carry on this great industry. I find in the *Ottawa Times*, a newspaper published at Ottawa, the county seat of Ottawa County, in which the Rico mining district is situated, the following extract:—

As there is no doubt of the permanent value of thousands of mines in every locality from Maine to Mexico and of the profitability of well-directed operations therein, we may reasonably conclude that greater quantities than ever before of the idle capital in this country and in Europe will seek mining investment. For the real goal of the mining interest it would be well if many of the mistakes of the past could not be repeated. It would be better if fair dealing and honest transactions could characterize every transfer. Mines will be purchased and worked for the precious metal in them for production and profit more than hitherto. Operations in many localities will be conducted upon a larger scale, with the best appliances and under the most careful management. There will be more mines worked by small corporations of active and practical owners. All of these indications are favourable to the best interest of mining, and tending to place it upon the same substantial and reliable basis that other productive industries are founded upon and successfully prosecuted.

The next extract is taken from the *Mining Record*, published at New York City:—

COL. BIDWELL'S LEGACY TO THE MINING INTEREST.

In our last issue we published at some length the speeches which were made at a dinner given at Delmonico's on the evening of Feb. 15 to a number of shareholders of the several mining companies of which Col. H. C. Bidwell was president at the time of his untimely death. Among the speeches made on that occasion, but crowded out last week, was one by Mr. H. B. Satterlee, which is now given in brief as fully presenting what may be called the legacy which Col. Bidwell bequeathed in his example to those who manage mining companies.

Mr. Satterlee, in paying a tribute to Col. Bidwell's successful career as a manager for his shareholders, and to his upright and equitable statements of the value, condition, and actual saving capacities of the properties which he originally placed on the eastern markets, stated that the acts of Mr. Bidwell had a much wider and more valuable influence in the devotion of eastern capital to mining industry than merely the production of satisfaction and profit to the shareholders of the companies of which he was president.

That his course had shown to the public that there were mining men of experience and ability who were willing and able to make money for others, as well as for themselves, who were willing to bring to the east properties at a fair cost remaining under active responsible management, and taking their profits, as earned in future alongside of the capitalist, and not aiming by sanguine representations to sell entirely out to the east at a rate which gave them the future profits of the property in advance before they were earned, and left capitalists with a burden of management, and to a labour of working merely for a profitable reimbursement. Mr. Satterlee stated that it was becoming apparent to our business men that an industry which gave more than \$3,000,000,000 of product yearly (as does the precious metals industry) must be carried on at a profit to somebody, or else it would decline. That this industry doubtless paid some producers greatly more than others, and as there was no loss from competition in the sale of the product (as is the case in all other industries), that the variation in profits must come from management, and from acquiring at fair rates profitable sources of supply—good mines at fair prices.

The third extract is taken from the recent inaugural address of Governor Pitkin to the Senate and House of Representatives of the State of Colorado:—

THE MINING INTEREST.

For more than 20 years the mineral resources of Colorado have attracted more or less attention throughout the country. By slow degrees the product of our mines annually increased, until two years ago we rejoiced in the fact that our shipments of bullion for the year 1878 had reached \$9,000,000. We then began to hope that in the future—in the distant future—we should become the great mineral producing state of the Union. The report of Wells, Fargo, and Co., which credits us with a production of about two millions less than the best authorities in the state estimate, show that our mineral production for 1880 exceeds that of California by over \$3,000,000 and of Nevada by more than \$6,000,000. It seems like a dream that in two short years we have passed the two great states on the Pacific coast and are to-day the foremost mineral state in the Union.

There is no other industry in the country that could prosper if the same mistakes were made in its management that have been made in our mining enterprises. Mining is a legitimate business when it is conducted on business principles. But it is too often the case that in mining enterprises all the rules are ignored which are regarded as essential in other business ventures. This is especially the case in regard to the amount of capital stock of many mining corporations. No manufacturer at the east would think of issuing a million dollars of stock to conduct a business requiring one hundred thousand dollars of capital. Yet in mining enterprises this disproportion too frequently exists, and as a necessary consequence, the great mining stocks sell at a very large discount from their par value. And when the eastern public are buying depreciated stocks they too frequently purchase those which are the cheapest, and, therefore, get those which are the most worthless.

These practices create a prejudice against mining investments, and are injurious to all of our citizens who conduct it on a legitimate basis. It is because the business of mining, when properly conducted, is so profitable that this industry has prospered notwithstanding the mistakes which are so commonly made. When it is conducted upon proper business principles and under the direction of men of intelligence and good judgment, it should be in Colorado the most profitable business in the world. There is no more certain indication of the confidence which is felt in our great resources and in the prosperous future before us than the rapid extension of the railroads. During the past year one company has constructed 300 miles within the state, being nearly a mile of completed road for every working day in the year. Those roads will soon furnish remote regions

with facilities for transportation which will enable them to compete with the older counties. When Gunnison, Summit, and the San Juan counties are furnished the same railroad facilities which the eastern sections of the state enjoy, the value of mining properties in those sections will be increased many fold, and their mineral productions will materially increase the annual bullion product of the state.

These extracts clearly show that from New York to Colorado public sentiment appreciates the fact that such changes should be made as regards the promotion and management of mining companies as to afford investors a very much larger proportion of profit than they have realised in the past. In my circular entitled "Mining as a Business: Points to be considered by English Capitalists as regards American and other Mining Investments," I have endeavoured to throw some light on the question of gain or loss, which may prove of financial benefit to many English investors. English capitalists ought to realise a very much larger proportion of profit and incur a very much smaller percentage of loss from their investments in mining companies than is now the case.

I have much pleasure in stating that the Rico Silver Mining Company has received the deed for the Puzzler Lode Claim, situated at Rico, on the north side of Horse Gulch, about one mile west of the Puzzler Lode Claim. For some time past they have been watching their chance to buy this mine, and think they have secured for the company a choice property, worthy of development. The Puzzler lode is a contact vein between limestone and porphyry, and promises splendidly. Ore taken from the vein 10 ft. from the surface carries galena, grey copper, silver, and a trace of gold. The gangue or vein matter is of such a nature as to indicate the probability of them finding silver-bearing lead carbonates similar to the Leadville carbonate ores. If they do find carbonate ore the Puzzler Mine will be extremely valuable. They have let a contract to run an adit in on the vein to a distance of 50 ft. They have several other good claims in view, which they would like to purchase if funds were available for the purpose.—*Chicago, Feb. 7.* J. J. WEST.

#### RICHEST GALENA MINE IN CANADA.

SIR,—The Victoria Silver Mine discovered in 1875 by Capt. G. B. Weeks, of Brooklyn, and purchased by him for a few dollars from an Indian, named Joe Bell, who claimed possession, is now referred to by the North Shore Miner (Lake Superior) as the richest galena mine in Canada. The vein proved a large one, measuring nearly 40 ft. wide, and was traced over a rather hilly undulating country for some miles. The rock formation is diorite and limestone, dipping south; the direction of the vein is north and south astronomic. During the summer of 1876 Mr. Armitage Rhodes, on behalf of Messrs. Rhodes and Ross, of Quebec, made a thorough and scientific exploration of this property, opening up three shafts, and sinking No. 1, or north, shaft to a depth of 30 feet. From these test pits and shaft about 150 tons of good ore were taken out, with 250 tons of low grade concentrating. This ore was in cubes or grains, carrying \$39 to the ton in silver alone, and rapidly changing from large to fine grain ore. Appearances were now most favourable. Much preliminary mining work, as well as road making and bridge building, was done, and while the road was in progress machinery to the weight of 65 tons arrived for the mine, including crushing, washing, and concentrating machinery for the treatment of ores, two rock crushers (14 tons), a Blake and Cornish engine, also iron rails for tramways, with trucks, &c. With the introduction of machinery it was found necessary to have a new captain—accordingly Capt. Sam Skewes was telegraphed in Salt Lake City, and in due time made his appearance at the mine, where he effected some important improvements. The crushing-mill was erected in a very short time, and here, for some reason unknown to the writer, the work of erecting machinery was suddenly stopped. Capt. Skewes was evidently in favour of mining, and from this date mining went on vigorously, and by Jan. 1, 1879, the shaft had reached a depth of 100 ft., with cross-cuts and drifts at 50 ft., and drifts at 100 ft. level, north 60 ft. and south 30 feet. During the summer of 1879 an exceedingly large quantity of ore was shipped for treatment to the Kingston Leadworks, Kingston, Ontario. Shafts Nos. 1 and 2 were carried to a depth of 160 and 100 ft. respectively; the south dip from the 100 ft. level was connected with No. 3 shaft, distant 180 feet.

Surface improvements were also being carried out, tramways and water supply were laid on to the crushing mill, 2000 cords of hard wood were cut by contract, and the entire machinery was in position for starting. At this date several thousand tons of rock awaited the crusher. Many recent improvements were also apparent, including some new cottages erected by married miners. The captain's house crowns the top of an elevated ridge at the head of the Lake, commanding a varied and pretty view.

A. W. R.

#### THE SOUTH AFRICAN DIAMOND FIELDS—A LAND OF DIAMONDS.

SIR,—Interest being at present felt in all relating to South Africa the subjoined description of this land of gems may be of value. The diamond district is about 700 miles inland from Cape Town, and about 500 miles from Port Elizabeth. To reach Kimberly from Cape Town one has to travel through a country called Karroo, a barren rocky tract, with scarcely any signs of life in it. Most of the country is worthless for farming purposes. Water is scarce; wood is very scarce. It is brought there by ox teams from a distance of 100 miles, and sold on the market at auction for from \$25 to \$30 per load, according to size and quality. But the diamonds. It is truly a land of diamonds. Already over \$125,000,000 worth have been discovered. In the late war one of the chiefs (Saccabuni) offered a quart measure full of diamonds for a cannon. Claims of 31 square feet have sold for \$48,000 per claim.

The mines are all worked by large companies. The largest is a French company. The manager informed me that their expenses were over \$70,000 a month. They take out of their mines 400 loads of diamondiferous earth per day—worth, on the average, \$14-40 per load. There are several large companies in the same mine. A mile and a-half from there is another mine, called Old De Beers Mine. Three miles further there is another one called Du Toit's Pan, and one mile from that is another called Bulfontein. All these are extensively worked by large companies.

Glasgow, Feb. 21.

TRAVELLER.

#### DYNAMITE MONOPOLY.

SIR,—I think the best way to break a monopoly is to encourage the use of the article nearest in make and quality. Now, I am agent for "Potentite," or Liverpool Cotton Powder, for Northumberland and Durham, and the following firms have used it, and it has given great satisfaction:—London Lead Company, Middleton, in Teesdale; River Tyne Commissioners, South Shields; and others. The price we are charging is only 1s. 9d., whereas dynamite is 2s., and I have found work the dynamite could not do that potentite has been able to execute. This explosive does not require warming in the coldest weather, thus making it much safer.

Feb. 24.

JOHN G. EAST.

#### SENTEIN MINING COMPANY.

SIR,—The facts stated, and the criticisms made in the letters which have appeared in your Journal as to our dressing machinery, the total expenses connected with it, the delays in its erection, its supposed capabilities, and its actual performance are, to my mind, serious and startling. They certainly dissipate any hopes of a dividend for the year 1880, and lead me to fear that, at the least, all the 18,000l. raised only last year is spent. If this be true, all the shareholders, in their own interests, should closely sift the expenditure, and carefully scrutinise the accounts. It is always a bad sign when a yearly meeting is much delayed. Last year, when a dividend of 10 per cent. for the year was declared on five months' returns and fifteen months' expenses, the report and accounts were issued about Jan. 21. Up to this date I have not received either for the last year, in spite of the secretary's letter last December in the *Mining Journal*, promising the accounts would be ready very soon after the close of the year.

I should much like to know one or two more facts about our dressing machinery. How much orestuff was dressed last year before Mr. Green's machinery was erected? How much has been dressed

by his machinery alone? What has been the total cost to the company of Mr. Green's and Mr. Dingey's machinery, including of course the expenses of transport and erection? It is idle to suppose the accounts will be so full as to show this. Probably they will be very concisely stated as last year. I think your correspondents have done the company good service in thoroughly ventilating this matter. Glowing promises for the future even with a new management will, I hope, not deter shareholders from thoroughly overhauling the management of our property last year. We had grand reports and promises of returns for that year, and we have had long and very expensive delays, disappointing returns, and not even a sign of a dividend. London, Feb. 24. SHAREHOLDER.

#### MINING IN SPAIN, ASTURIAS.

SIR,—Pola de Allende in the month of February is not an interesting place, but it will bear comparison with any other towns within a distance of 15 miles. About one mile southwards from this place extensive ancient workings are met with, and again, south from these about three miles near a village called Peruyada, there are others. Workings are found also from Pola de Allende northwards, at Perciles, Arredo, Toro, Navelgas, Naraval, Moras, and Ferrera. At the two last named there are deposits of slags rich in iron, but with limited excavations. From Naraval southwards, the workings bear evident proof of having been effected upon quartz reefs, or in quartzite and Silurian slate, and although Naraval and Navelgas are the only places to-day where gold in quantity is found in the debris, still the streams that drain the districts where the others are situated yield gold on washing their sands after freshets, in small quantities. The River Caudal runs through Pola de Allende eastwards. This river, as well as the Narcea (mentioned in a former letter), yields gold from their sands and pockets. The valley through which the Caudal flows is narrow, in many places a mere gorge, with mountain ranges on either side, some of the peaks of which exceed 1000 metres in height, and covered as they are at present with snow, and only tenanted by wolves, bears, lynxes, and wild boars or javali, it needs the daring spirit of the hunter, combined with the patience and self-denial of the *sarant*, to make excursions over and about them at this time of the year. Whoever would do so, whilst following the track of a bear, or keeping a sharp ear for the barking of wolves in his vicinity, or perhaps preparing a meal of chamois chops or javali steaks, would not overlook another danger—that of the avalanches—which often comes thundering down the mountain sides, carrying with them masses of loosened rock to the valley below. All this, however, is changed in April; then the snows will have disappeared except from the highest peaks, the mountain sides will be covered with verdure, except where the avalanches will have left their debris of disintegrated rocks in their track to the valley, and flocks of goats and small sheep will be grazing quietly everywhere under the eye of the shepherds and their dogs, as if there were never a wolf created. These shepherds sometimes have their dwellings a long way from where they pasture their flocks; they leave their families behind, and often do not return for a month or more. When I say their families, I mean wife, and children under 10 years of age. Boys beyond this age accompany and assist their fathers at shepherding. The shepherds on their walks have, here and there amongst the mountains, their sheds (corrales) erected, constructed of dry stone, and roofed with stone slabs, where they cook their food, make their cheese, sleep at night, and shelter (albergar) during rainy weather. These sheds are generally devoid of doors, and open to any one and all. They guard their flocks from stray wolves by enclosing them the best way they can. Formerly sad havoc was made by these wild beasts, but now that there is a price paid for their heads by the provincial Governments throughout the country of 11 ducats per head (equivalent to 17. 4s. 2d.), wolves are yearly getting scarcer in the haunts they used to frequent, and during summer are hardly ever seen except about the highest and most rugged mountain peaks. Wolf-traps have been constructed in the districts under consideration by the shepherds and also by the villagers; they can be seen dotting the mountain sides wherever we turn our eyes. These traps are built as follows:—An excavation is made in the side of the mountain, and a strong circular wall is built in this excavation, with dry stone, on what nautical men would call "an even keel." This wall is carried up, so that on the part nearest the mountain side it is nearly level with the surface, thus forming a well of about 10 ft. deep. As soon as it is known that there are wolves in the vicinity these traps are baited by having young kids placed in them, whose bleating soon attracts the wolves; these spring in and soon devour the kid, but when they try to get out again they find they cannot. A watch having been set, it is known when the traps are filled—the villagers or shepherds are advised—they proceed *en masse*, and soon dispatch the prey. As they recover the value of the kids and the wages of the watchman from the value of the heads, they are not slow in looking after all the wolves that may happen to intrude within the haunts of men. Starting westward from Pola de Allende, along a new Government road now in course of construction, from Grandas de Saline to Cangas de Tineo, we come to Peñasgita, a small village, where we cross the Caudal over a very shaky bridge, and where we begin the ascent of the Sierra del Palo, to the pass El Palo, at an altitude of 860 metres, following the only road which formerly allowed transit between the country to the east and west of this range. This road follows the course of a torrent, which has made a way for itself down the mountain side. When we passed it the snow was thawing on the heights, and this torrent was mighty in speed and potency. Vast crops of Silurian quartzite, with an over-lying stratum of limestone of the transition period, were laid bare by denudation.

On passing the Palo the road runs along the ridge or backbone of a narrow stirrup of the Palo range to Montefurado, this stirrup having on the south side the valley of the Lor, and on that of the north that of the River Castelo, and consists of the outcrop of a quartzite reef, with a dip of about 30° from the perpendicular to south-east to north-west. The mountain side towards the Lor is very steep, and Montefurado, a straggling row of some 20 houses, is built almost upon the edge of (what may reasonably be called) the precipice. Here we failed to get anything to eat, nevertheless that we had ridden from Pola de Allende, a distance of 15 miles, through a bracing though very cold atmosphere, with an empty stomach. The village was without provisions until the cart had returned from Grandas de Saline, where it had gone to bring in maize meal, which, by the bye, is all that is ever used for bread in these districts. This is eaten with gusto when one is very hungry; it is called *borona*, and will ever be remembered by campaigners as being rather difficult of digestion.

We had, therefore, to turn northwards to inspect the very celebrated Cueva de Juanrara, an excavation some three miles distant, which has so many legends tacked on to its history as would fill a volume. The most important one is "that on penetration to a certain distance in the gallery there is a chamber similar to that in which Sinbad found himself, and lighted also by a wonderful and perpetual lamp; that this chamber contains the remains of Doña Urraca, one of the somewhat mystical Queens of Asturias, that it also contains life size statues of said queen and several other persons in massive gold, and further, that immense treasures in jewels and massive gold utensils were deposited there with the foregoing." We found the perforation to have been made in semi-crystalline limestone, and after passing in for some distance, through Silurian slate, we came to very heavy falls, which completely blocked up any further advance. This fall was reported to cover the remains of some 20 or more countrymen, who, burning with a desire to rob Doña Urraca of her treasures some 30 years ago, fell a prey to their own greed, dying under a fall from the roof, which was looked upon by their fellows as a just judgement, and they have to this day been left in almost undisturbed possession. There are on the outside vast heaps of attle, showing that extensive workings were effected in the interior. There are also the remains of two large reservoirs for water, constructed of stone and Roman cement; and from here I traced an aqueduct along the mountain side meanderings, for a distance which I estimate at over 12 miles. This aqueduct is in a fairly good state of preservation throughout, and although so many ages have gone by since its makers—the Roman legions moved about here—still with a comparatively small outlay it could be repaired, and again utilised for the same purposes as those for which it was constructed. The



winter torrents are gradually wearing away the little heaps at this cave, taking them down in their course to the River Castelo. This river has always been noted for the large quantity of gold it has yielded yearly to those villagers who, living along its banks, are sufficiently energetic to wash its sands in the summer months after the torrents and rains have subsided. This gold they sell to the pedlars and others engaged in it as a regular trade. As there are along this river several ancient workings besides the above cave, it is doubtless a fact that the gold comes from the little heaps of these workings for the most part, and is carried into the river by the winter torrents. There is, however, on this river, near a village called Corondeño, an outcrop of manganiferous ore, with visible gold in it, and which on pulverising and washing yields a return. Thin quartz leaders are also met with near the above, and traversing the river, having visible gold. The scenery along this river is in some places very majestic. Looking upwards on either side from its banks nothing can be seen but the steeped mountains, rising to a height of nearly 1000 metres, at an angle of about 30° out of the perpendicular, and with immense chestnut and walnut trees growing on each rugged steep. In summer it is grand. This river falls into and is a tributary of the Navia.

Returning again to Montefurado, we go down the steep side of the mountain to the Lor, here only a small stream. Crossing this and following its southern bank we come to the small village of Villaru, the inhabitants of which appear to be mostly deformed, indescribably dirty, and ugly. Near to this place we meet with the first of a series of ancient excavations on a very large scale, and which form a chain along the foot of the mountain margin of the Lor, terminating at Gorbayon and Villar de Justo, two villages of rival merit with Villaru. There are extensive attle heaps, consisting of quartzite and decomposed slate. All the heaps are of the same description, showing that the excavations would have been effected in the same strata under the same circumstances, and would consequently yield produce of the same quality. These attle heaps are being denuded by winter torrents, and gradually carried into the Lor. This river also is a tributary of and runs into the Navia, and like the Castelo, its sands have always yielded gold when washed for that metal.

The extent of the ancient workings, and the conduction of water from such distances, would in themselves be sufficient to induce a spirit of enquiry into the particulars of such excavations. Some light is thrown upon the matter by the fact that every year a great number of people obtain their livelihood—and some fortunes are being and have been made—by washing the sands of these rivers, and obtaining from them by means of the very rude utensils employed, a very small percentage of the precious metal which they contain.

On my return to Montefurado, the *patrona* informed me that the *horona* is now baked. I shall, therefore, rest for to-day, to continue my journey from this place at an early date. J. A. JONES.  
Gijón, Feb. 12.

#### GOLD EXTRACTION.

SIR,—Having devoted a good deal of time and patience to this provokingly interesting subject, of course I read with avidity anything and everything that comes in my way relating thereto. In last week's *Journal* Mr. Sargent is, I think, a little too hard upon Mr. Desingnoles and the Bi-chloride Process for the Extraction of Gold from Quartz. I take it that it is not of very much consequence whether there is anything new in this particular mode of operation, or whether any familiar appliances are more or less brought into acquisition for the accomplishment of the above object. I got a copy of the specification the day it was published, and the day after I made written application to an eminent patent agent to whom reference was made for the privilege of an introduction to the patentee. Not getting a reply in due course I called at the agent's office, and was told that my letter had been forwarded to Paris, and that I should presently hear something of it. The reply, if any, never reached me. Mr. Sargent, it appears, has since then had an opportunity of witnessing an experimental trial of the process, and he evidently thinks that it cannot effect what is proposed for it. From the outset I have seen no reason why it should not. I think it really will, but I fail to find anything new in the detailed *modus operandi* except an ingenious contrivance for recovering the used mercury with its freight of the precious metals. If the patentee asserts for his invention that he can by the use of it extract the ultimate particle of gold from any given minerals, he undertakes probably what he cannot perform. It is, however, not at all essential that this should ever be accomplished. The desideratum is a mode, any mode, by which gold can be extracted at the largest possible profit, a mode involving, closely as can be, ordinary skill and simple appliances, and, above all, an approximate security against the occasional dishonesty of employees.

To my thinking Mr. Sargent expects too much of Mr. Desingnoles' experiment in that it should give him exactly back into his hand any given quantity of gold dust he may choose to put into the pounded mineral to be submitted to the operation. The steady aim, I think, should not be at that point. If I take 1 lb. worth of gold dust, costing exactly that money, it differs in circumstance considerably from 1 lb. worth of gold, secreted, it may be, in a metallic sulphide which costs but 10s. The secret really worth knowing is whether any, and if any, how much more than the outlay of 10s. will be the resulting profit, no matter what or whose the process. Mr. Sargent and I are quite agreed as to the great expensiveness and bother of Mr. Desingnoles' method of operation. The patentee surely does not assert that his process will attack gold, and secure the whole of it in all its varied states of combination with sulphides, arsenides, tellurides, &c. I did not at the time so read the specification. As I have just remarked, it is not necessary that all this should be done. That process or mode holds first rank which wins the most gold at the least cost. That is the proportion. Can Mr. Desingnoles' process do this? I fear it cannot. *Q. ed.* On poor ores, to wit?

In fairness allow me to ask why gold extractors should be reasonably expected to do that which persons of other occupations generally fail to do? Nearly all things run somewhat to waste. Do copper miners catch all their copper? Do tanners all their tin? Lead dressers all their lead? Can even food grain be gathered off the fields without entailing waste? Gold, as it appears to me, will always be as surely wasted, more or less in the getting, as it will in the handling when gotten. Universally royalty has short comings as well as the more lowly born, and the royal metals are not likely to be exceptions to the general rule.

The Indian gold mines, I fear, will have a hard time of it if the State conditions I handed you last week have to be complied with to the letter. They differ considerably from the State conditions at home. In India the Government claims no right to the precious metals upon private lands. At home the Crown claims the royal metals wherever found. The Crown, however, has no right of entry upon private lands in order to get them when found, and there is apparently neither legal nor moral obligation to render voluntarily to Cæsar that which Cæsar has no power to come and take of his own accord. There is something in that. If an owner of mineral rights by chance or skill finds gold *in situ*, the Crown, on application and the payment of 10%, will allow the said gold finder to search for it. This reads very like a half suppressed joke. The fact really is—By special Acts of Parliament the Crown, when short of gold and silver for coinage purposes, has a pre-emptive right to purchase auriferous copper ore and argentiferous lead ore of private owners at the respective fixed prices of 16*l.* and 25*l.* the ton. To this never-yet-exercised right there can be no possible objection. In India no more than 30 acres of Crown land will be leased to any one applicant, and when leased the lessee must keep at the least five labourers per acre regularly employed. In this country on Crown lands 10*l.* will obtain a short lease of 200 or 300 acres, requiring only a couple of miners to work, and that not constantly, on the whole quantity. In India 10*l.* an acre is charged, payable in advance. At home no such charge is made. Only from 1*l.* to 6*l.* minimum rent is charged for 200 or 300 acres, and 1-10*l.*, 1-12*l.*, 1-15*l.*, or 1-20*l.* royalty, as it may happen. But if a lessee happens to prove his mine valuable, and has a chance of selling it at a profit above his outlay upon the property, even if the profit is prospective only, the Crown office makes, or tries to make, him hand over in hard cash 25 per cent. of the profit, immediate or prospective, before consent will be given to the assignment of the lease. The office, in fact, advisedly thrusts a royal finger into the fire of gold mining adventure, to pull out a full quarter part of the

chestnuts. This has by no means the appearance of gracious majesty, and the office in Whitehall-place, I am quite sure, is not intentionally tarnishing that time-honoured and gracefully-expressive adjective, although the would-be practice seemingly has a tendency that way. It is hoped that Mr. Pugh, the Member for Cardiganshire, will take note of this as one item in favour of the advisability of his intended motion for a Commission of Inquiry in the Management of Crown Lands.

Gold extractors need not quarrel at all or be jealous of one another. There is a wide field for all the known modes of operation. No one of them will ever do all he aims at. As in morals, the most that can be done is to keep going on towards perfection. So in gold-getting contrivances perfection is never likely to be attained. It is quite easy to overvalue the new and to undervalue the old contrivances, and it may happen that some modern adaptations of certain of the old methods will give the most profitable results after all. We shall see. I think I have read nearly all that has been written on gold extraction, and I cannot resist the temptation to give you a quotation from an old book I met with the other day, containing some very queer notions of the seven metals. Under the heading "Of the Secret Hermetic Mystery, or Great Philosophick Work," I found:—

Of Venus, or copper, Her gold is extracted thus. Calcine her with the Son of Saturn, then calcine Luna with the same also. Put both these calxes together, and calcine for three days with the Son of Saturn, mixed with Mother Tellus, to which add the Calx of Sol, calcined with the same Son of Saturn, *ana.* Put all together and calcine them for 24 hours, reduce them with antimony, keep all in a melted heat for three days, then take it forth and quench it, being melted 10 or 12 times in the tinging and fixing spirit of lapis calimmaris, antimony, and zinc, *ana.* This is very profitable, and not difficult to perform; it may be done also (as before) without calcination."

The Times of India of Jan. 29 writes:—  
A story in connection with the gold mania has a pleasing incident interwoven in it. A poor and aged widow owned a coffee garden at Kadar, in Mysore province, out of which she hoped to earn a moderate competence, but bad seasons and the ravages of leaf disease ruined the property, and she sought to dispose of it before it became worthless. She offered to sell it for 200 rupees, but no purchaser was forthcoming. A few weeks ago a company of gold prospectors, in tracing up a reef from Hassan into Kadar, ascertained that a portion of it cut through the widow's estate, and accordingly purchased the latter from her for 15,000 rupees.

It is an ill wind that blows nobody good. Mania even, it would seem, has its uses.—Feb. 22. T. A. R.

#### THE LEAD TRADE.

SIR,—Our lead market has been very quiet for the last 14 days, and little or nothing has been done, and up to date no sales of importance are reported. A series of interesting and useful tables have been issued by the River Tyne Commissioners of the imports and exports on the Tyne during the year ending Dec. 31, 1880, and we have taken out a few that may be of interest to the readers of your valuable paper:—

	1880. Tons.	1879. Tons.	Inc. Tons.	Dec. Tons.
Imports.				
Bayrites, sulphate .....	789 ...	650 ...	139 ...	—
Burnt sulphur ore, containing copper .....	40,095 ...	43,975 ...	—	3,880
Copper ore and copper ...	7,890 ...	6,207 ...	1,683 ...	—
Chromite ore .....	1,078 ...	372 ...	706 ...	—
Iron ore .....	380,235 ...	199,397 ...	180,838 ...	—
Lead .....	33,481 ...	39,617 ...	—	6,136
Lead ore .....	46 ...	446 ...	—	400
Manganese .....	1,216 ...	2,319 ...	—	1,103
Phosphate .....	10,629 ...	16,684 ...	—	6,055
Gypsum .....	3,686 ...	3,054 ...	632 ...	—
Sulphur ore .....	170,994 ...	125,582 ...	45,412 ...	—
Slates .....	3,743 ...	1,559 ...	2,184 ...	—
Exports.				
Bayrites, carbonate .....	4,615 ...	2,208 ...	2,407 ...	—
Copper, ingots, cake, &c. ...	6,374 ...	7,384 ...	—	1,010
Lead, pig .....	9,137 ...	11,316 ...	—	2,179
Lead, red and white .....	17,623 ...	16,446 ...	1,174 ...	—
Lead, sheets .....	8,932 ...	9,856 ...	—	—

Newcastle-on-Tyne, Feb. 24.

STOCKS.

#### RELATIVE PRICES OF MINE SHARES.

SIR,—As a reader of the *Mining Journal* I have been struck with the favour which is shown by the public for particular copper mine shares, whilst others in the same district are apparently neglected. Why, for instance, should one mine, with 11,500 shares, giving at the present price about 23,000*l.* only as the value of the mine, remain at 2*l.* per share; whilst another in the same neighbourhood, with 35,000 shares, giving at the present price 140,000*l.* as the value of the mine, are quoted at 4*l.* per share? The discoveries in both mines are, from what one gathers from the reports in the *Journal*, of considerable importance, and there seems to be every prospect of those mines entering the Dividend List as soon as machinery is erected to bring their respective lodes to grass. Why, I ask, is there such a discrepancy in the prices of these shares? Either one is too dear or the other too cheap. J. H.

#### PENHALE AND BARTON, &c.

SIR,—Mining in the St. Columb district is in a state of revival. Penhale and Barton Mines are to be worked in a vigorous spirit, and they justify such a working. The prospects there are first-class. Two good agents who inspected them on Monday last speak in the highest terms of their productive quality. Trugo (Copper) Mine is also very promising. This mine is held by a most respectable proprietary. Parka Consols (Toldish) is also a promising mine, now opening up. There are several other mines about to be re-worked in St. Enoder. There is a good time coming for all classes interested in mining industry.—Truro, Feb. 24. R. SYMONS.

#### THE IRISH MINE LEAGUE.

SIR,—In the *Mining Journal* of Feb. 12, and under the Dublin Share Market report, it is mentioned that a League is being formed in Ireland for the purpose of facilitating the development of the mining resources of that country. If this League be really in the interest of mining in Ireland it is very desirable that your correspondent should publish full particulars, as I and many others would like to become interested in the movement. OWNER.  
Change Alley, Feb. 23.

#### A MINES REGULATION BILL FOR IRELAND.

SIR,—Kindly permit me to inform "An Irish Landlord" in Glasgow that the Bill will not interfere with or injure nominal owners or bankrupt landlords. It is intended, however, to compel absentee landlords to do their duty, and it simply provides that dues shall be paid on profits instead of on gross produce, and that the land required for mining purposes shall be leased on fair and equitable terms. It is the opinion of men of common sense and common honesty that such a Bill will ultimately confer incalculable benefit on the population of Ireland. But how stands the case at present? Mr. McBirney, J.P., Chairman of Cork and Bandon, West Cork, and Glen Valley, and Bantry Extensions Railways, at the half-yearly meeting of the shareholders held last week, remarked in reference to the land required for the Bantry Extension that "Irish people who had land to dispose of were very short-sighted people. The Government valuation of the land they required was 4*l.* an acre, and the tenants swore it was worth from 30*l.* to 50*l.* an acre; the same tenants would not pay their landlord more than Griffith's valuation, and some of them would not pay anything." Another instance, in which I am personally engaged, affords additional proof of the imperative necessity for a Mines Bill for this country. A few private friends and myself were about, a few weeks since, to invest money in working what we knew to be a rich mine, but we had well considered the matter, so as to make it impossible that the outlay of money should be reckless or injudicious. We obtained a lease from the landlord, and had then to deal with the tenant, whose term had 20 years to run. We required about an acre of ground, which consisted of rocks and furze; 4*l.* or 5*l.* an acre would be far more than its value, but the tenant would not take less than 70*l.* an acre! Now, any "Irish Landlord" who would sanction or uphold such a system of robbery as I have named, and am ready to prove, ought to be sent to Hong Kong, or a great way beyond it. Glasgow is too mild a climate for him. If there has been reckless and injudicious outlay of money in the Schull district, the capitalist who permitted it was either a

fool or a —, and I deny that such a ridiculous assertion is the cause of the depression of mining throughout Ireland. The true cause is, generally speaking, the cupidity, the grasping greediness, the short sightedness, and unprincipled conduct of Irish landlords and tenants. True, there are honourable exceptions. The late Earl of Bandon was one of the best landlords that ever lived in England or Ireland. If all the rest were like him we should not require Land Bills or Mines Bills. If it would be edifying to an "Irish Landlord" in Glasgow, I can adduce numerous examples of the reckless and endless voracity of Irish landlords and tenants in connection with mines.—Schull, Feb. 22. TRUTH.

#### DEVON FRIENDSHIP.

SIR,—It is very important to notice how unanimous all those practical authorities who know anything of this property, and whose opinions are worth anything, are in expressing the most favourable anticipations of its early and great success, or rather its resuming its very profitable state, and even upon a larger scale than formerly, owing to the great additional advantages now existing for working the mine. This is especially the case with those who have a personal knowledge of the underground workings, from their connection with the operations when they were extensively carried on. There is also but one opinion among the people of the district; and if there is any special importance in the fact, I may say that I have good reason for believing that Capt. Isaac Richards, the manager of Devon Great Consols, and other agents of those well-known mines, confidently entertain the most favourable opinions of Devon Friendship. I am greatly pleased that Mr. Murchison has acquired this property, for he richly deserves being connected with a largely profitable mine. I see he is a director, and it is reported that his colleagues have done him the honour of electing him Chairman; if so, he has the good fortune of commencing his career in a more prominent position in the mining world, with an undertaking that is sure to materially increase his influence. I shall watch his conduct as a Chairman with interest, and, if I mistake not, he will do ample justice to the confidence placed in him by his colleagues. A SHAREHOLDER.  
Twistock, Feb. 22.

#### GREAT WEST VAN.

SIR,—Your correspondent, "Victim," calls attention to one of the most extraordinary mining transactions ever heard of even in Cardiganshire, where the manipulation of new names for defunct and worthless concerns has been raised to the dignity of a science, only it would scarcely be safe to give that science its proper name. The name of this mine would naturally lead a stranger to the district to infer that the mine had some more or less remote connection with the celebrated Van lode, while, as I believe, it has not the slightest affinity to it. It seems that it is a very old mine, but has never been a successful one, and never likely to be on any considerable scale; but surely it should, with its extensive plant of machinery, be worth for the old shareholders the modest sum for which the original vender re-bought it. And if the directors' management of the property had been such as to insure confidence, the property should not be allowed to slip through so cheaply. The great mistake all through appears to have arisen from the attempt, serious or otherwise, to make of a small mine a gigantic one. As compared with the Van, this Great West Van reminds one of Landseer's picture, "Dignity and Impudence." I do not quite understand the process by which your correspondent was misled, but some of your correspondents might perhaps be kind enough to favour the readers of the *Journal* with a short history of this transaction, for, I am sure, few things of the kind would equal it. A SMALLER VICTIM.

#### MINING IN ST. AGNES DISTRICT.

SIR,—As a constant reader of the *Mining Journal* for nearly 30 years, I would like to say a few words on mining in this district. The Royal Polberron Consols has been worked for 20 years by the Messrs. Taylor, when 40,000*l.* were given in dividends, principally from old workings and stulls. I hear that the Messrs. Taylor are going to re-work these mines, and everybody says here Royal Polberron will become a large and dividend-paying mine. Wheal Trevaunance comes next here. For 200 years tributaries have been at work, and when the price of tin will allow these miners could get their bread, but at times when the price of tin is low the miners have to stop working. I have been told that the Enys family, the lords of Trevaunance, have received 200,000*l.* in dues during the 200 years working, thus accounting for the remarks of a writer under the heading and plan of New Kitty Mine this week. The writer is in error. It was not dividends, but dues. However, the tributaries here will always do well when tin is a good price. In Wheal Coates, next in turn, we may well congratulate Mr. Battye and his friends upon the success attending their efforts here after a long and persevering work. Wheal Coates is fast becoming a large, profitable, and lasting mine. A few more months driving in the direction to where it is said large deposits of tin are, dividends will be regularly declared. I say thanks to Mr. Battye for sticking to Wheal Coates, and doubtless under the quiet and judicious management of Capt. Martin Wheal Coates will, ere long, be a splendid mine. I cannot finish this subject in one article, and must reserve other thoughts until next week, but before drawing to a close I will refer to New Kitty. Some years ago the Messrs. Taylor worked Polbreen (now New Kitty); it did not pay under their working. I do not think this company lost scarcely anything. Some short time after Mr. Christian, of London, started Polbreen (the late Capt. John Nancarrow was the manager), during which time about 22,000*l.* was expended, and 11,000*l.* worth of tin was raised. I verily believe if Capt. Nancarrow had sunk Polbreen some 50 fms., and spent a few thousand pounds more, he would have a good mine. I have a high opinion of New Kitty (late Polbreen), and believe that 10,000*l.* more underground will more than make it a good mine. I do not know when Polbreen profited 40,000*l.* I shall be glad if some one will give me the date and under whose management this mine profited 40,000*l.* I also believe that there are many good mines yet to be opened up in and around the Beacon Hill. More about this in my next. CONSTANT READER.

#### CALLINGTON MINING DISTRICT.

SIR,—I am glad to confirm the statements of several other correspondents of the *Journal* that mining in the neighbourhood of Callington is looking better than it has looked for some years past. Hearing that the New Holmbush Mining Company (Limited) are going to start the well-known Redmoor and South Kelly Bray mines, I should like to say a few words about it. I consider these to be among the most valuable pieces of mining property in the eastern part of Cornwall, as they are situated on the western slope of Kit Hill. I believe it is generally understood that there are a great number of east and west lodes running through the hill and the Redmoor and South Kelly Bray sets embrace several of these well-known lodes. The Cornwall Great Consols Mine is being worked on some of these tin lodes, and they are with from 20 to 30 men returning about 5 tons of tin per month, realising about 58*l.* per ton. These lodes also traverse these sets. I see from the *Mining Journal* that there is a company formed, and all shares taken up, to work the old Kit Hill Mine; I should think these things would lead the New Holmbush Mining Company to see that it is high time for them to be up and doing. Now is the time to put in their pumping-engine at Redmoor Mine, and then they will be able to draw out all the water from the mines before another winter sets in, when I venture to say they will have before them the greatest prize and paying mines in Cornwall or Devon; they have a splendid silver-lead lode which traverses from the southern boundary of Redmoor to the northern boundary of Holmbush Mine; this lode in the former working returned about 100 tons of silver-lead per month, realising about 20*l.* per ton, and by driving on this lode they will intersect all the lodes which traverse these sets from east to west, and I believe they will meet with lodes that have never been seen as yet in these mines, and when the tin and other lodes have been worked upon close to the lead lode there have been great deposits of minerals—arsenical-mundic, copper, tin, and silver-lead. Also when these lodes intersect the great cross-course east of the lead lode, and traverse these mines from north to south, they have been found to be highly productive for minerals. I have been given to understand there are lodes in Redmoor Mine north underlies and south underlies. I should very much like to hear of



the junction of these lodes, as I know from experience in other lodes they may reasonably expect to find great deposit of minerals. In conclusion, I might remark that when Redmoor worked last the ores were sent to Calstock Quay, and coals brought from thence to work the mine by horse labour. Now there is the East Cornwall Minerals Railway which runs from Calstock to Kelly Bray; this will enable the present company to work at far less than one-half the cost of the former working.

A YOUNG OBSERVER OF MINES.

Callington, Feb. 24.

#### WEST KITTY.

SIR,—Some time ago I gave a hint in your Journal respecting this mine, and now everybody is asking, "What are West Kitty shares?" and the dealers find to their disappointment that the market has been entirely cleared of the stock. But why they should be surprised I am utterly at a loss to understand. Those persons who have not bought have overlooked the plainest indications in favour of a rise which ever came under my notice. I think people will be somewhat astonished before long at the result of operations here. I have no object whatever in making these observations, excepting that one likes for a good mine to have fair play. Another prize will be New Kitty. Why New Kitty shares should be at 35s. I am at a loss to comprehend, especially in the face of what appeared in the Journal last week. True there is no animation in the markets generally, but if your readers will take a hint from one who knows they will buy New Kittys. Perhaps I may be able to make use of this letter as an advertisement in 12 months hence when I compare prices then and now, as I undoubtedly shall do when that time comes round.—*Gracechurch-street, Feb. 23.*

THOMAS EARLY.

#### SILVER HILL.

SIR,—The tunnel, which has already been driven 70 fms. into the rising ground towards Kit Hill, is to be prosecuted in that direction, to intersect all the lodes in the sett—eight or nine in number. Remembering how valuable some of these lodes have proved to be in Wheal Brothers, Wheal Newton, &c., the greatest confidence is entertained that Silver Hill will be equal to the best of them, if not superior. The tunnel will drain the lodes to a great depth, thus obviating the necessity for any pumping machinery.

R. SYMONS.

Truro, Feb. 23.

#### LADY ASHBURTON.

SIR,—I am pleased to learn that the directors have decided on sinking the engine-shaft on the lode, to test it below the 15 fm. level, which is the present bottom. At that level the yield of silver is such as could scarcely be expected at that depth, and the agent feels confident that as depth increases the richness of the lode will increase also. There is great activity amongst the miners in the Callington district.

R. SYMONS.

Truro, Feb. 23.

#### GREAT POLGOOTH MINE.

SIR,—It must be very gratifying to the labouring and mercantile classes at and around St. Austell to learn the fact that this ancient and productive tin mine is to be re-opened immediately, and to be worked in an energetic manner, ample capital being forthcoming for that purpose. This mine is said to have yielded more tin and more profit than any other mine in Cornwall. The profit was about 750,000*l.* on the millions of pounds worth of tin raised. The date of its origin is unknown. If worked in the manner proposed without doubt large and lasting dividends will be made.

R. SYMONS.

Truro, Feb. 23.

#### CARN CAMBORNE.

SIR,—About thirteen months ago this mine, which is situate near the Beacon, in Camborne, was re-started by Messrs. Endean and Co., of London, who now hold about four-fifths of the shares—6000 in number. A meeting of the proprietors was held on the mine on Monday last, when a very encouraging report was presented by the managers. The mine is only 105 fathoms deep, and is, therefore, a very shallow mine in comparison with the mines surrounding it. As depth is increased the prospects improve, so that great confidence is expressed by the agents and by others who know the property that success will soon be realised. The mine has a first-class geological position, analogous to that of Dolcoath, which it adjoins, Pendarves Consols (late Condurrow Mine), and Stray Park. It has been alleged that the profits from Dolcoath from first to last exceed a million sterling. The profit on Stray Park is said to have been 300,000*l.*, and that on Condurrow about 100,000*l.* Similar results may be looked for in Carn Camborne after the lodes have been properly developed.

R. SYMONS.

Truro, Feb. 23.

[For remainder of Original Correspondence see this day's Journal.]

#### FOREIGN MINING AND METALLURGY.

The tone of the Belgian iron trade has been generally satisfactory. The principal firms are pursuing a prudent policy, and are endeavouring to establish themselves on the ground which they have gained—in other words, they show an indisposition to attempt any reckless ill-considered advances in price. At Charleroi prices have been scarcely so high, and 5*l.* 4*s.* per ton is about the general average for iron. This is, however, not a universal rate, and a contract for 100 tons has been closed on Dutch account at 5*l.* 8*s.* per ton. Slates have been well maintained upon the Belgian markets; No. 2 bar has made 7*l.* 4*s.* to 7*l.* 12*s.* per ton according to the works. Boiler plates have realised 8*l.* to 8*l.* 8*s.* per ton. The mechanical construction workshops of Belgium are overdone with orders, and every day appears to bring with it some new foreign contracts. Orders for 500 trucks for the Northern of Spain Railway have been divided between the Brame-le-Comte Works, the Malines Construction Workshops, and M.M. Nicaise and Delcave. Herr Krupp, of Essen, has ordered a 1500-horse power engine from M. Nauden Kerchove, of Gand; this engine is intended for a rolling mill of colossal dimensions. Mr. Moss, of London, has purchased 640 tons of old rails from the Belgian State Railways at 3*l.* 6*s.* per ton.

Upon the French markets merchants' iron has made about 7*l.* 12*s.* per ton. Some contracts have been concluded at 7*l.* 8*s.* per ton, but these are exceptions. It appears impossible that, overdone as the works are at present with orders, prices should decline for some time to come.

Belgian coal owners continue to show themselves pretty well satisfied with the course of the markets and the state of the coal trade, so that few complaints are heard. There is less demand for domestic qualities of coal, the season being now well advanced, but industrial coal is almost everywhere in good demand. In the Mons basin especially several collieries can scarcely meet the demands upon their productive resources, and they are working with the greatest activity. In the Liege basin also the works of all kinds are calling for coal in large quantities. The demand for domestic qualities of coal has slightly revived in Germany. Industrial coal has continued in good demand; prices have not experienced any material change.

The tone of the German iron trade has not sensibly varied, but prices appear to be firmly established. The demand for pig has acquired additional strength, Bessemer pig has especially been readily disposed of. The demand for rolled iron has also improved. Orders for wire have been received from England and Russia. Contracts will be let at Bromberg March 4, for 4680 tons of rails, 4311 tons of iron sleepers, and 1959 tons of accessories. A contract for 5700 tons of rails has also been closed on Hungarian account.

The jute industries appear to have prospered last year in Austria as well as in Germany. The directors of the First Austrian Jute Spinning and Weaving Company propose to declare a dividend of 9 per cent.

The shares of the Suez Canal Company have latterly received a special share of attention on the Paris Bourse, and there has been a strong upward movement of prices, which continued during last week. The improvement in the receipts meanwhile has ceased. The receipts for last week amounted to 1,070,000 *frs.*, an amount which only about equals the return for the corresponding period last year. The ardour of speculators, however, does not appear to have been checked. The prices of the Panama Canal shares, which had experienced a decline, also improved.

#### REPORT FROM CORNWALL.

Feb. 24.—It is quite possible, judging by present appearances, that we may have a return, partially at least, of the conditions which have so materially interfered with the output of our tin mines, consequent on the restriction of dressing operations by the severe visitation of frost and snow. The weather has again been very much colder, with sharp frost in some of the more exposed localities, and as we often get a very large proportion of our winter weather in March it is quite clear that we are by no means out of the wood. On the other hand, we have not had an excessive rainfall, which, as affecting the pumping charges, is something substantial in the way of set-off. These meteorological conditions aside, there is no change of a noteworthy character to report, and the outlook still continues, therefore, decidedly favourable.

So the attempt made to invoke the aid of the Local Government Board to crush—or, at any rate, to weight most heavily—the arsenic works at Wheal Friendship has failed, though the local authorities have "meddled and muddled," the board above have a clearer idea of their duties. Of course we should not for a moment think of defending the carrying on of any manufacture in a manner injurious to health; but that is just what the Tavistock rural sanitary authorities were never able to prove. Their ideas went one way, and the facts, unfortunately for them, another, while the ignorance of some of the members on the rudiments of science was as amusing as, under other conditions, it might have been mischievous. Some people appear to think that a company of any kind is always fair game.

Reference was made in the last number of the *Mining Journal* to the fact of the winding shaft of the Rosebridge Colliery, near Wigan, being 2458 ft. in depth, and presumably the deepest in England. This is certainly so now, but we are not at all sure that it will be the case long. Dolcoath, the deepest mine in Cornwall, is adding to its depth materially year by year; and cannot now, reckoning from the surface level to the bottom of the sump, be very far short of 400 fms. Perhaps some one connected with this famous mine would give us the exact figure. The customary way of reckoning from adit does our mines, and Dolcoath especially, in this particular an injustice. Our impression is that if Dolcoath continues to look so well in the bottom level as it has been accustomed to do, the attainment of a greater depth than Rosebridge is little more than a question of a few months.

It is not easy to exaggerate the importance of the last subject discussed under the auspices of the Mining Institute—the attitude of the mining interest of Cornwall towards the Employers' Liability Act, which has caused such dire commotion in the North of England. Cornwall has long been fortunate in having in its "doctor and club" system, an institution which, whatever its drawbacks may have been, and whatever its shortcomings are, has been a great utility, and is capable of development to a very important extent—such development, in fact, as would enable the Western mining populations fairly and equitably to contract themselves out of the Act. As a rule, the clubs are unable to pay their way, and under any general affiliated system would unquestionably be able to do so; but that save such affiliation and joint action would be required to meet exceptional calamity, and consequent distress is self-evident.

These clubs do not in the case of accidents make payment for cessation of work contingent on its cause, which is certainly a defect in their working, and so far not in harmony with the principles of the Act. How far it would be advisable to insist on this is another matter. The general position of the question which has to be dealt with is very fairly summed up in the following terms by a writer in the *Western Morning News*—

"The question with which mining companies are confronted as a result of the passing of the Employers' Liability Act is—are these mine clubs founded and worked in such a way as to enable employers and employees to contract out of the Act? Will the clubs serve the object contemplated in the Bill passed last year so as to afford sufficient reason for not bringing its provisions to bear on the mining industry? The answer lies in a great measure with two parties mainly concerned. Having regard to the nature of mining in Devon and Cornwall as compared with other industries which come under the new Act, it may be thought desirable that an effort should be made to contract out of the Act, provided, of course, it can be done consistently with the spirit of the Act. The miner, in judging the question from his point of view—and as one of the class for whose benefit the measure was passed—ought to clearly discern the relative circumstances of the old system and the new Bill. It will be of paramount importance for him to recollect that while under the present system he can obtain allowances from the club with little or no difficulty, he can only secure it under the Employers' Liability Act by proving any accident that may befall him, followed as a consequence of negligence or carelessness on the part of his employers or their acting managers or agents, or 'by reason of the act or omission of any person in the service of the employer done or made in obedience to the rules or by-laws of the employer.' A claimant under the Act has to give a deal of information of an irrefragable character before he can sustain his case. The exceptions, too, to compensate under the Act are important, in so far as an injured person is unable to claim if he knew 'of the defect or negligence which caused his injury, and failed within a reasonable time to give, or cause to be given, information thereof to the employer or some person superior to himself in the service of the employer, unless he was aware of the employer or superior already knew of the negligence.' The miners, therefore, will have to choose between the old system of compensation without the necessity of having to supply full details of an accident and the new law, which, undoubtedly, would secure them a much larger sum in the event of proving a case, but which at the same time can only be done by means of a tedious process, if not vexatious litigation. So much for the employees. The next point to be considered is the position of the employers. They naturally feel that the application of the new law would greatly interfere with mining, and not a few of them are strongly persuaded that a strict enforcement of it would be a severe blow to the industry. In their efforts, however, to contract out of the Act—efforts which so far the miners have approved—they must not persuade themselves that it can be done as easily as some appear to imagine. It can scarcely be accomplished by relying on the clubs as now constituted. The Act provides for a much larger amount of compensation than the clubs provide, and if the employers are desirous of contracting out of the Act they must be prepared to give the clubs greater financial support than in the past. Nor, in the opinion of counsel, can they do so by arriving at a mere tacit understanding that the companies will contribute to the club fund if they run short. There must, according to the same counsel, be a distinct agreement that the employers will contribute such a sum periodically to the club's fund as a sort of compensation fund. If this is not done there is much reason to believe that the clubs will be placed in the same position as other benefit clubs which are maintained by monthly contributions, but to which the employers of those who derive benefit therefrom do not necessarily contribute. If the mines are ready to subscribe at certain periods with the miners, and so give the club a better position, it is probable they will be able to contract out of the Act, and then the relations between the miners of the West Country and their employers will continue as heretofore without the prospect of an action at law springing up at any moment to estrange one from the other, or embitter the feeling between class and class.

The meeting to-day took the wisest course in appointing a committee to consider the whole subject, and the names will at once command confidence. Messrs. Bain, Pike, Bush, Secombe, G. Taylor, Rule (Caradon), T. B. Politho, Daubuz, Abbott, R. Taylor, T. Richards, with the officers of the Mining Institute. We believe the miners generally are quite prepared to contract out of the Act.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Feb. 24.—The Coal Trade continues in a healthy condition in most of the localities, and the colliers are generally content with their advance of 3*d.* and 1*d.* per "day" respectively in the thick and thin seams which followed upon the declared rise in furnace coal. Prices of fuel and ironstone are unaltered upon those given last week. Pig-iron makers this afternoon were unable to report any improvement, and prices of some pigs made away from South Staffordshire which lately advanced 5*s.* were lower by 2*s.* 6*d.* per ton. Some Lincolnshire pigs showed this feature. Staffordshire cinder pigs stand at 2*l.* 2*s.* 6*d.* to 2*l.* Sheets and hoops are the only branches of the finished iron trade that show movement. The former stand at 7*l.* 15*s.* to 8*l.* for singles. One hoop-making firm has 3000 tons of baling hoops on order for the United States.

Mr. Capper, the operative secretary to the Mill and Forge Wages Board, has addressed a communication to the employers section stating that the operatives of South Staffordshire, North Staffordshire, and Shropshire, will consent to the adoption of an insurance scheme to take the place of the Employers' Liability Bill in those districts. At the annual meeting of the board a few days ago a committee of employers and operatives was appointed to arrange a scheme, and to determine the proportions in which the two sides of the board should contribute. At present there is a wide difference between what the masters view as their just share and what the men view as the masters share.

The Commissioners under the South Staffordshire Mines Drainage Acts have announced that the arbitrators have made their draft award for an alteration in the boundaries of the Bilston and Tipton districts, and they give notice that the arbitrators and Commissioners

will hold a joint sitting in Wolverhampton on March 5 to hear any objections to the draft award.

The newly-elected President of the South Staffordshire Ironmasters' Association is Mr. Benjamin Hingley, proprietor of the Netherton Finished Ironworks, near Dudley. The term of office is three years' duration.

The South Staffordshire and East Worcestershire Institute of Mining Engineers, whose head-quarters are at Dudley, have this week held their annual meeting. Mr. Thomas Brettell, of Dudley, was elected President for the ensuing 12 months, and Mr. William Farnworth, of Swindon, vice-Chairman. The President elect referred in his address to the Employers' Liability Bill. He held that its provisions would entail extra cost on the already heavily taxed coalowners. He further contended that it would mean additional expense to the public, since they would have to pay more for their coal. He read to the meeting special contracts that some employers had provided for their workpeople in order to be exempt from the operations of the Act.—[We shall give a detailed report in next week's Journal.]

At the Patent Nut and Bolt Company annual meeting (Mr. J. D. Weston, the Chairman, presiding) the directors' report stated that the net profit for the year was 36,556*l.* 4*s.* 7*d.*, which, with the balance brought forward from the previous year, gave a disposable surplus of 43,183*l.* 5*s.* 3*d.* They proposed to pay a dividend of 10 per cent., to place 10,000*l.* to the reserve fund, making it 100,000*l.*, and to carry forward a balance of 5183*l.* 5*s.* 3*d.* The report was adopted, and the dividend declared.

At Perry and Company fifth annual meeting Mr. J. H. Nettlefold in moving the adoption of the report spoke of the successful nature of the year's trading. Dividends at the rate of 5 per cent. on preferred shares, and 7½ per cent. on ordinary shares, were declared, and the retiring directors, Messrs. J. H. Nettlefold and J. Cartland, were re-elected.

#### TRADE OF THE TYNE AND WEAR.

Feb. 23.—The steam coal trade continues dull, owing to the entire stoppage of the Baltic trade, as the Sound is blocked by ice. The trade between these rivers and North-Eastern Europe has been almost entirely closed during the past few weeks, owing to ice in these quarters. Some large sailing vessels have arrived in the Tyne during the past few days to load steam coals for the East Indies, and it is expected that the best steam coal works will be more fully employed during the present week, but full employment for the steam coal works in Northumberland is not expected until the opening of the Baltic. The other branches of the coal trade are moderately employed. The demand for gas coals continues good, but the shipments of those coals during the past week have scarcely come up to the average. The demand for small and manufacturing coals continues very fair, and the demand for coke is very steady, as the inland furnace trade for coals and coke continues strong.

The Russian Government have advertised for coals and coke for the supply of the Baltic Fleet. The bulk of these coals are to be North Country coals and a small quantity of Cardiff coal; the total quantity of coal required is not large—30,000 tons. The Russian Government are paying great attention to the development of the coal and iron trades in that country, and wherever coal is found it is developed, and utilised if possible. It is now stated that a Russian mining engineer has discovered good coal in the Crimea, and the merits of the new field will no doubt be tested shortly, as the discovery of coal has long been desired in that quarter. Sebastopol is destined shortly to become the chief naval station in the Black Sea. Grave doubts are, however, entertained as to the value of this Crimean coal, as the district has been often explored in search of minerals.

With regard to the Seaham Colliery disaster there is no prospect of the opening of the Maudlin seam and the recovery of the bodies entombed there at present. A meeting of the engineers' committee was held in Newcastle on Saturday, when the report of Mr. Corbett on the indications afforded by the pipes in the stoppings was read. The committee, in discussing the report, arrived at the conclusion that it would not be safe to interfere with the stoppings before the middle of June at the earliest. The bulk of the men are still out here, although the engineers consider the workings in the Hutton and other seams are perfectly safe at present, and the Union officials also fully coincide with this view. Some men are, however, at work, and a very unseemly disturbance took place last week in consequence. The men who are on strike assembled, and a violent attack was made on the men who are employed when they left the pit; some of the poor fellows were severely bruised by their assailants, and it was found necessary to get a considerable force of policemen to preserve order on the premises. A few of the men more violent than the others, led by Simeon Vickers, who appears to have been the leader in these violent proceedings, entered the house of one of the men who had been at work, and dragged him out of bed, and beat and kicked him severely. Several of these men were brought before the magistrates at Seaham on Monday, when S. Vickers and several others were convicted. Vickers was sentenced to two months' imprisonment and the others to one month with hard labour for this very serious offence. These riotous proceedings have caused the masters to determine to give notice to all the men who are out to quit the houses they occupy within 14 days.

The Blyndon Main Colliery, which was closed some time ago owing to the failure of the parties who carried it on many years, is expected to be re-started shortly. Very good coke was produced at those works and also excellent fire-bricks and other fire-clay goods.

The pig-iron trade showed a greatly improved feeling at the early part of the week, but the failure of speculators, Messrs. Kirk Brothers, of Workington, and Monson Brothers, Glasgow, has had a bad effect. Both these firms dealt largely in Cleveland iron, and they speculated in a most reckless manner. On Friday last the market was very quiet at Middlesbrough, and little business was done. No. 3, which had touched 39*s.*, was quoted at 38*s.* 6*d.*, and No. 4 for 38*s.* Makers were not offering. Warrants stand nominally at 40*s.* 6*d.*, but there is very little doing in them; there is, however, more enquiry for forward delivery. Stocks have been largely increasing this month, and this causes an uneasy feeling. About 14,000 tons of pig-iron were shipped on the first three days of the week, and a good deal of this was sent out to Scotland. There is a large addition still being made to Cleveland warrants; Messrs. Connall now hold 142,000 tons. Since the resumption of fine weather the finishing ironworks in Durham and Cleveland have been very actively employed; specifications for plates and angles have flowed in plentifully. At the present time the weekly production of manufactured iron is taken at 12,000 tons—a large output, which consists of plates, angles, and bars. A new sheet mill is to be started, and it is expected that the output of plates and angles will be speedily increased. The largest contribution to the production is from the plate mills of the Consett Iron Company, and the output of these works is now about 1900 tons weekly.

Iron shipbuilding continues brisk on these rivers, and most of the engineers, founders, &c., are also well employed. The shipwrights and most of the mechanics at the various works on the Tyne and Wear have been advanced in wages from 1*s.* to 3*s.* per week. Those advances are about equal to reductions made during the late depression. Marine engine building, already a very large and flourishing trade on these rivers, is likely to be largely increased, especially on the Tyne. The new marine engine-works of the North-Eastern Engine Company will be started as soon as possible at Wallsend.

Messrs. Hawthorn and Co. are about to remove their marine engine works from Newcastle to St. Peter's, on the Tyne, below the bridges, where the engines and boilers constructed can be put into vessels direct, thus saving very considerable expense in the shape of cartage, &c. These justly celebrated works were originally founded by Mr. Hawthorn, who was a colliery engineer at Walbottle Colliery, a few miles west of Newcastle, and colliery winding and pumping engines were manufactured for some time. The best type and largest size of these engines known at that day were manufactured at those works. When the locomotive engine was so far perfected by Stephenson as to bring it into general use on railways the manufacture of those engines was also introduced at Hawthorn's, and the locomotives of Hawthorn soon rivalled those constructed by Stephenson. When iron steamships were introduced the manufacture of marine engines



and boilers was commenced at Hawthorn's, and this business has been largely entered into, and the marine engines and boilers of Hawthorn's have attained a very high position in the mercantile marine of this and other countries. This company has had boiler works at St. Peter's some time, and they are now about to remove their marine engine works, with all the necessary branches of work for constructing these engines, such as brass foundry, &c., to the same place. The works are designed on an extensive scale, and when fully developed it is expected that about 1000 hands will be employed there.

The Central Northumberland Railway scheme continues to meet with general support throughout the county. Meetings have been held at all the principal towns, and resolutions have been passed unanimously at those meetings approving of the scheme. It is probable that the North Eastern Railway Company will undertake the formation of the railway, but if not it is certain that the undertaking cannot be much longer delayed.

#### REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

The Cambrian Railways Company have recently issued a pamphlet giving the statistics of their gross revenue and expenditure during the twelve years from 1869 to 1880, and as it is over this system that the mineral traffic of Cardiganshire, Montgomeryshire, and portions of Shropshire and Merionethshire is carried, we have in their returns an outline of the mineral history of these counties during the same twelve years. In 1869 the receipts from the mineral traffic amounted to 25,135*l.*, and increased at the rate of 1894*l.* 8*s.* per year up to 1873, and kept on increasing from then to 1877 at the rate of 1129*l.* per year. In this year the receipts reached the maximum of 37,633*l.*, and then commenced falling at the rate of 656*l.* 6*s.* per year until 1880, when the total was 35,664*l.*, showing thus a total rise per year since 1869 of 957*l.* odd. The receipts from the other descriptions of traffic have fluctuated in a like manner, but the years at which they reach their respective maximum points vary in each case, as well as the amount under the head of working expenses. It is satisfactory, however, to notice that while 1869 shows a net revenue of 49,747*l.*, the year 1880 shows one of 90,844*l.*. We notice also that the working expenses increase in a far less proportion than the receipts, thus showing the success of the management in keeping down the expenses in spite of increasing traffic.

It is also curious to notice the introduction of steel rails. Up to 1875 no steel rails were used, but during that year 58 tons were laid down, together with 721 tons of iron rails. In 1878 only 8 tons of iron rails were used, but the consumption of steel had amounted to 1153 tons, and from that time have been used alone. The mines in Cardiganshire are for the most part busy, and even the small trial shafts and levels which are scattered over the county are beginning to show signs of renewed life, but even the most enthusiastic prospector has now come to the conclusion that the time when men would pay almost fabulous sums for the right of searching for minerals, with or without the prospect of finding them, has gone by, and he is now content to receive but a small amount as purchase-money, and that in most cases in instalments.

The quarries in the Corris district still continue to be fully occupied, as well as those in the other slate quarrying districts of North Wales, and no mention is made of reducing the price of the slates to the selling price before the rise of 5 per cent., which took place at the commencement of the year.

A large colliery firm at Bolton are, it is said, about to dismiss their employees, with a view to inviting Welsh colliers to take their place. A step like this, however necessary it may be, would surely involve serious disturbances between the imported Welsh and the native colliers.

The Welsh colliery proprietors have forwarded to the Home Secretary a communication with the intent to secure a clause in the Mines Act prohibiting the carrying of tobacco-pipes or lights into the collieries at all. According to the present arrangements the men are allowed to carry tobacco-pipes, &c., as far as the lamp station.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE

Feb. 24.—During the last week or two there has been more than usual activity at the collieries in Derbyshire, more especially in the northern parts of the county, consequent on the strike in Lancashire as well as in South Yorkshire. At some of the collieries in the latter, owned by the largest iron companies in Sheffield, the men have struck, so that they have now to purchase the coal, and, of course, at an advanced rate, so as to keep their works going. This is a really serious matter, seeing that contracts for iron and steel have been based, amongst other things, on the value of the coal required in their production, so that there is no doubt that considerable loss will be incurred. Still, Derbyshire is much benefited by this state of things, although it may ultimately turn out to be the case that when other districts have settled down the miners of the county may think that their time has arrived, for they might then look for support from the men who were in full employment. Not only, however, has the Midland Railway Company been taxed to the utmost in taking coal into South Yorkshire, but the demand upon its resources for Lancashire has been considerable. In addition there has been the London and southern traffic to be taken into consideration, and which is of the greatest importance to the leading colliery owners. From Clay Cross, as well as from Eckington, Grassmoor, Blackwell, and Tibshelf, something like an average tonnage has been sent to London, and prices have come down so far as consumers are concerned; but there is no doubt that the merchants have had a happy time of it, seeing that the disturbances in some of the mining districts gave them the opportunity of rising prices to a very high point, whilst they were receiving their supplies of coal under contracts entered into a considerable time since, and of course at low rates. Colliery owners have been considered by those outside the trade to have shared in the advanced rates, and their workpeople being impressed with the same idea have thought the time opportune for demanding an advance of wages. But the fact is that they have, in most instances, been working at a loss, whilst prices are now more likely to come down than otherwise. Steam coal is in better request, and a good business has been done in engine fuel for distant markets, where the collieries have been standing. The iron trade of Derbyshire has undergone but little change of late, there having been no falling off so far as regards the make of crude iron. Merchant and general rolled iron, however, is in but moderate request. At Dronfield there is still considerable activity at the steelworks, where there are heavy orders in hand for rails for home and foreign lines.

In Sheffield business appears to improve in most branches of trade, and the workmen are, as a rule, well employed. But this activity brings with it certain penalties calculated to embarrass employers. Owing to the demand for springs and certain qualities of knives some of the spring makers and blade grinders have struck for an advance of wages now that they can work full time. Contented with three or four days a week they immediately become discontented when they are able to work full time. At the mills there is a heavy output of composite plates for the Admiralty, as well as of ordinary ship and boiler plates, sheets, hoops, wire, and bars. Steel rail makers are as busy as they well can be, and there is also plenty doing in railway material, such as springs, axles, tyres, wheels, and wagons. Cutlery manufacturers are also well off, especially in the finer qualities of table and pocket knives. The foundries have undergone but little change of late, but some improvement is now looked forward to in the lighter descriptions of castings required by builders.

Throughout the South Yorkshire district the miners are in a most unsettled state, there being now close upon 10,000 out, in consequence of the refusal of the employers to give them an advance of wages equal to 10 per cent. This, and the state of affairs in Lancashire, have caused those collieries at work to be more than usually busy, but there is every appearance that this state of things will not last more than a week, or at most a fortnight, longer. As might be expected under such circumstances, there has been quite a drain upon the resources of the district for house coal, whilst a great deal more has been done in engine fuel. Steam coal, which was particularly quiet for a long time, has gone off much better, especially for the re-

quirements of Lancashire manufacturers. In coke a good business continues to be done, more particularly for iron smelting purposes.

## DEVON FRIENDSHIP MINE.

### RESUMPTION OF EXTENSIVE OPERATIONS.

ENTHUSIASTIC AND CORDIAL RECEPTION GIVEN AT THE MINE TO MR. MURCHISON, THE CHAIRMAN OF THE COMPANY.

The above mine, long known as Wheal Friendship, is situated in the picturesque little village of Marytavy, about four miles from Tavistock. It has been worked most successfully for nearly a century, and is pronounced by the highest practical authorities to contain vast resources of undeveloped mineral wealth. Underground operations were stopped some seven or eight years ago for want of the capital requisite to provide the necessary machinery for working the mine on the most approved modern principles, and owing to the then very depressed state of mining; but Mr. Lanyon, the proprietor, resolved to turn over the burrows for arsenical mundic, and has done so with much success, although the stuff at surface, rich in mundic, is so prodigious in quantity that it will take many years to exhaust the source of great profit which it will afford. Mr. Lanyon has disposed of the whole concern to a new company (in which he also takes a large interest) with plenty of capital, who intend to develop the south copper lodes, which have scarcely been touched, although they are declared by competent judges to be rich in mundic, copper, and tin. On Saturday the event was celebrated by a spread at the account-house on the mine, when a most hearty reception was given to Mr. J. H. Murchison, F.R.G.S., of London, whose name has for many years been held in high esteem in the South of Devon and East of Cornwall, he having been the pioneer of many important mining speculations in that part of the country. Capt. Daw, a native of Marytavy, who has made for himself a name and a place in the annals of mining, by the marvellous success he has achieved in connection with Norwegian mines, was also well received, and having inspected the property, and reported most favourably upon it, his testimony is received with the greatest confidence by all who know his antecedents as a mining agent. Mr. Murchison was unanimously voted to the chair, but declined to fill that position on account of ill-health. Capt. Daw therefore presided, and was supported in the vice-chair by Mr. J. Pearce, of Tavistock. There were also present Messrs. Sharpe, Kerly (London), Loam, jun. (Redruth), W. Cripser, York, jun., J. Mathews, H. Pearce (Tavistock), Capt. Giffard (Callington), Mr. James, and Capt. Tredinnick (Marytavy), and others.

Upon the removal of the cloth the Chairman gave "The Queen," which was loyally received.

The health of Mr. J. F. Buller, the lord of the soil, was also drunk with cordiality.

The CHAIRMAN said he had worked at that old "bal" when he was but ten years of age, and although he had been engaged elsewhere for many years it afforded him extreme pleasure to come back to the place where he was born and reared to assist in the renewed success of the mine. He remembered how productive the old lodes used to be, and when he returned to Marytavy last summer it occurred to him that the south lodes, which had not been worked, were in all probability equally productive, and after thinking the matter over he and some others consulted Mr. Lanyon about the price, the result being that he had come over from the rich mines of Norway to set to work the old "bal" once more, and he felt sure that with energy and perseverance they would be rewarded with great success. (Hear, hear.) Their object was to start a new part of the mine—the south lodes, which ran parallel with the old courses of ore. The old lodes had returned a profit of 350,000*l.* to the adventurers, and the dues paid to Mr. J. F. Buller, the lord, were between a 10th and an 18th. The dues were now reduced to a 30th. Although the past month had been very stormy Capt. Tredinnick (resident manager) could bear him out in saying that they had raised arsenical mundic and tin enough, after paying expenses, to leave a profit of 80*l.*; this was raised out of the halvans and above the adit from Bennett's lode. Seeing that the lode was so productive there, and knowing that they had two lodes more between that and South Wheal Friendship, he saw no reason why they should not drive a cross-cut from Bennett's lode to intersect those lodes. A very old tributor, and a comrade of his, who worked at the 130 fm. level, stated that he had made 40*l.* "start" in three weeks 12 fms. west of Bennett's shaft. On the east of Bennett's shaft something like 30 or 40 fms. were driven. The winze was going down, and as soon as the water was forked at the 30 an immense amount of ground would be opened. Their returns that day for the past month were 50 or 60 tons of arsenic, and 1½ ton of tin, besides copper. These results would be doubled as soon as they reached the 30 fm. level; he had seen the ore 30 ft. wide. Considering these facts he thought the speculation was a very good one to put before capitalists, and had he thought otherwise he should not have placed it before them. (Hear, hear.) As soon as the 30 fm. level was in fork he expected the return of arsenic to be at least doubled. They would then be raising more than 120 tons of arsenic a month he hoped by Michaelmas; the quantity of tin would then probably be increased, and he had no doubt that a great deal of yellow copper ore would be sent to the Plymouth sampling quays. Under the old system they were obliged to employ horses to convey the produce through Tavistock to the boats at Morwellham, a distance of several miles, whereas now it only had to be drawn half a mile to the railway station. At that time it cost 4*s.* 6*d.* to draw a ton of stuff from the mine to Tavistock, and 2*s.* a ton more to convey it thence to Morwellham. Now it only costs 1*s.* for conveyance to the Marytavy Station, and half-a-crown from the station at Plymouth, resulting in a saving on the former workings of 3*s.* a ton. They possessed splendid water-power, and he believed they had ample to work the mine. (Hear, hear.) The Chairman concluded by proposing "Success to Devon Friendship," coupling with the toast the name of Capt. Tredinnick, who had been agent for six years, and Capt. Giffard, of Callington, who having been engaged on the property many years ago was thoroughly conversant with most of the underground workings.

Capt. GIFFARD said he believed he was about the last man but the late Capt. Kent who went underground after the mine was stopped. In the bottom of the 170 a lode in the eastern cross-course a great many fathoms in length would produce 5 tons of real good quality mundic per fathom, including copper ore, the leading part of the lode being from 16 to 18 in. wide. At the west of the eastern cross-course, through some mishap, the lode had not been seen for 60 fms. or 70 fms. At the west of the side cross-course the bottom of the level had been taken away from 12 to 15 fms. deep, where a great quantity of ore had been returned, and the lode was quite as good in the bottom, but could not be taken away, the water being too overpowering. Having alluded to the difficulties experienced in the old workings from the want of adequate machinery, the speaker expressed his conviction that Bennett's lode would also turn out exceedingly well. Machinery must be procured and certain alterations affected which would involve an outlay of money, but for every penny thus laid out they would be thoroughly repaid. They possessed an advantage which those who conducted the old workings were deprived of in having South Wheal Friendship, because by the erection of a wheel the water there, which was going to waste, could be secured and utilised for dressing and washing purposes. He believed they possessed such a property as had not been brought before the public for many years, and he had no hesitation in saying that when the water was forked in the 170 a very rich and lasting property would be the result. (Applause.)

Capt. TREDINNICK also responded, and said he fully believed that by opening the 30 of Bennett's shaft they would so increase their returns of mundic as to keep two calciners at work. As soon as they got down to the 30 and reached the winze, which it was hoped would be accomplished in a month or six weeks, any quantity of mundic could be taken away cheaply, and the returns would be very considerably increased. Their only calciner was working from 50 to 55 tons of arsenic a month. Their tin had averaged 20 tons for the past two years. By having two calciners kept fully supplied they would be able to raise from 110 to 120 tons of arsenic a month.

The VICE-CHAIRMAN expressed the pleasure it gave him to be present on such an occasion, and said he remembered when quite a little boy admiring the splendid horses which drew the produce of Wheal Friendship through Tavistock to the quays at Morwellham. The mine had been a source of great benefit to the town of Tavistock, and it was located in one of the prettiest little places in the south of Devon. He thoroughly believed that the property would prove a first-rate investment, and he was glad to be able to say that they had good men connected with it. They had a gentleman with them that day who took a great interest in the mine—their old and esteemed friend, Mr. Murchison. (Loud applause.) There was a deal of friendship in the name of Murchison—it was a household name in that district. ("Hear, hear," and applause.) It was a name which was remembered with feelings of esteem and gratitude in the Tavistock mineral district, and, therefore, it was very gratifying to the adventurers to have such a gentleman connected with the mine. ("Hear, hear," and applause.) He begged to propose "The health of Mr. Murchison in connection with Devon Friendship Mine," for from his experience of Mr. Murchison he felt that he was a gentleman whose connection would add greatly to the benefit of that concern. (Long applause.)

Mr. MURCHISON, who was received with much cordiality, said he thanked them very sincerely for the manner in which the toast of his health had been received. He was not about to inflict upon them a long speech, for in the first place the state of his health and strength would preclude it; in the second place, he thought it would be unnecessary, after the favourable speeches they had heard, that he should dwell on the value of the property. But he would also venture to suggest that he might defer any lengthy speechifying until they met to congratulate themselves on the success of their enterprise; and by doing this they might be setting a good example to others. He would, however, just say that when that property was introduced to him by his friend, Capt. Daw, he did not hesitate to entertain it for one moment, because his long experience of him was this—that when Capt. Daw had introduced similar properties to his notice not only had the promises been fulfilled, but he might use the words of another man with reference to Capt. Daw's reports, and say that instead of taking off a discount from the valuations estimated by Capt. Daw, one might add a considerable premium. (Applause.) They were not met exactly to re-start the mine, because, if he was not mistaken, it had never been suspended. He believed its operations had been continued for nearly a century. (Hear, hear.) During that time there had been an immense accumulation at surface and broken underground of produce which until very recently had been of no value. At all events, a mineral which a few years ago was of no commercial value could now be turned to a most profitable account. They had not to go and discover a good mine. They had a large quantity of what was now valuable metal ready discovered for them, and they had only to apply mechanical means and use commercial principles, and they had a certain and greatly increased profit to be derived at once. (Applause.) He might also remind them that though in former times this arsenical mundic was of little value, and was now of greater importance, the time might perhaps come when that metal might not be so valuable as now. Therefore here it was they had the advantage. They were not aiming at making that simply an arsenical mine, but their object was to secure a much larger, permanent, and valuable return from copper and tin, the metals for which that mine was so famous in former days. (Applause.) Another advantage the property possessed was that while the price of copper might not be so high as it was when the mine was at full work before, yet, compared with other English mines, the quality of the copper of that mine was unquestionably higher than the average, and although the price they might obtain for copper was not at present so high as in former days, yet, on the other hand, their expenses would be considerably less. (Hear, hear.) There would be less for carriage, and, if he was not mistaken, less for labour; at all events there would be a greater field for their labour market, because the railway now brought labour to their very doors. Capt. Daw had told them that the royalty would be something like half the amount which was paid by the previous owners. All these things combined tended to make that mine a more certain and permanent undertaking than most others of its kind. (Hear, hear.) They had to begin with a certain and increasing profit, which they would derive from what might be considered extraneous sources; but while they were getting that profit, and long before the time they had exhausted those extraneous resources, there was no doubt they would be getting large returns of those minerals (copper and tin) which were so valuable in the previous history of Wheal Friendship, and in the history of mining in the Tavistock district. The Devon Friendship Mine, from its antiquity, must almost be revered in the memory of the fortunate residents of the beautiful town of Tavistock, and looked upon as an ancient institution, which would continue to be the pride of the county, for the history of this mine might be considered the history of mining in the Tavistock district. It was 31 years ago since he last visited that mine, and spent two days in going through it at surface and underground. There was also at present a mine in the Tavistock district which was attracting a good deal of attention. It was a valuable one, and would become still more valuable. He referred to Wheal Crebor, the first mine which he had ever set to work, and it had been at work ever since. (Applause.) The noted East Wheal Russell was another of his undertakings. These and other mines were then commenced from the surface, and they could only be judged of at first by indications, but it was now very different with Devon Friendship. People not concerned in the property could see that the shareholders had a good mine, and that much ore was discovered for them, so that they only had to erect the necessary machinery and return the mineral, but in the days to which he had alluded, when other mines in that district were worked by him, a very different state of things prevailed. Mr. Murchison expressed his thanks to the company for the cordial manner in which they had received his health, and resumed his seat amid long and loud applause.

The CHAIRMAN then gave "The Engineers," which was briefly and appropriately acknowledged by Mr. Loam, jun.

The VICE-CHAIRMAN, in proposing Capt. Daw's health, said no doubt the captain would realise a fortune from the Norwegian mines with which he was identified, and they could all feel that the fortune would be bestowed on the right individual. He (Mr. Pearce) felt confident that when certain improvements had been effected on the property, the Devon Friendship Mine would prove more remunerative in the future than it had ever done in the past. (Hear, hear.)

Capt. DAW briefly responded, and humorously observed that from Mr. Pearce's remarks it appeared that a man could sometimes be honoured in his own country. (Laughter and applause.)

Mr. W. CRIPER, in proposing the health of Mr. Kerly (the legal gentleman who conducted the transfer of the mine), said how happy he was to be present on that occasion, and the fact that he was surrounded by early associations afforded him additional pleasure. He remembered visiting Marytavy many years ago, to see the great water-wheel, said to be the next in size to the largest water-wheel in England. Wheal Friendship was the largest mine in the district until it was for a time eclipsed by Devon Great Consols. But he believed that even the workings of the old Friendship in the past was nothing to what might be realised in the future. When they considered that at least 50,000*l.* worth of work had been already executed for the new company, and that another 50,000*l.* worth of mineral was at surface, only waiting to be returned; and when they considered the hundreds of thousands of tons to be returned from the new lodes it was intended to work, they would be able to form some idea of the vast wealth which was to be realised from that mine. Having spoken of the great success which attended many mines through the improved price of arsenic, Mr. Cripser said he hoped the price would keep up, so that they might realise large profits. The value of the water-power which they possessed at Devon Friendship could not be over-estimated, as there would be a saving of from 250*l.* to 350*l.* a month by the use of water-power as compared with the cost of coal and steam engines, which had to be employed at other mines. He remembered Mr. Murchison many years ago, when Mr. Hitchins and Mr. Skinner, an old friend and relative of his (the speaker's) used to be very intimate with Mr. Murchison. He looked upon them as the pioneers of those great industries which had redounded to their credit and the good of the dis-



**WATERPROOF BLACKING FOR BELTS.**—A new blacking for application upon belts, harness, boots and shoes, and, indeed, upon any leather which requires polishing and preserving, has just been introduced—Atwood's Improved and Perfect Blacking—the merits claimed for which are that it contains no acid or vitriolic substance, and that the main constituents are blended bland oils, which have been guaranteed by the most eminent scientific chemists as strictly preservative of leather. It appears that the blacking has been well tested, and declared to be a perfectly innocent composition—feeding, not exhausting, the leather—giving a satin-like polish by mere sponging to the surface to which it is applied. The leather, instead

with the railway company with the view of obtaining some rebate or reduction and possibly they might succeed in obtaining it. In bad times the railways are

An extraordinary meeting was subsequently held for the purpose of considering and (if approved of) passing the subjoined special resolution:—

That the Articles of Association of the company be altered by the omission

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therefrom of Article 32—"In no case shall the directors be bound to enquire into the validity, authority, legal effect, or genuineness of any deed of transfer produced by a person claiming as transferee of any share in accordance with the Articles, and whether they abstain from enquiring, or do so enquire and are misled, the transferor shall have no claim whatever upon the company in respect of the share, except for the dividends previously declared in respect thereof, but only, if at all, upon the transferee."

The SECRETARY read the notice convening the extraordinary meeting. The CHAIRMAN said before they could apply to the Stock Exchange for a quotation it was necessary that the Articles of Association should be altered by the omission of this article. Several other gold mining companies had had to eliminate this article, and he proposed a resolution giving effect to the notice.

Colonel LINDSAY seconded the motion. A SHAREHOLDER asked if there was any other objection on the part of the Stock Exchange Committee? Had all the shares been placed. The CHAIRMAN replied that all the shares had been placed and there was no other objection to the granting of a quotation. The motion was carried unanimously, and the meeting then closed with the usual compliments.

#### ENGLISH AND AUSTRALIAN COPPER COMPANY.

The ordinary general meeting of shareholders was held, on Thursday, at the Cannon-street Hotel.

Mr. R. A. ROUTH (the Chairman) presiding. The notice calling the meeting was read by Mr. C. B. ROGERS, the secretary. The report and accounts were taken as read.

The CHAIRMAN, in commenting upon the figures, said that the gross quantity of ore, regulus, and precipitate received from the various mines from July 1, 1879, to June 30, 1880, had been as follows—The ore was 2481 tons, against 4070 tons; the regulus and furnace stuff 29 tons, against 77 tons; the precipitate 3 tons, against 12 tons 6 cwt.; the rough copper 1 ton 4 cwt., against 14 tons 6 cwt. The purchases at Newcastle had been—ore, 6339 tons 2 cwt., against 6051 tons 10 cwt.; regulus, 1 ton 1 cwt.; rough copper, 3 tons 10 cwt., against 12 tons 11 cwt.; the total quantity purchased being 8553 tons 19 cwt., against 10,239 tons. The quantity of ore, regulus, and precipitate smelted at the Port Adelaide Smelting Works from July 1, 1879, to June 30, 1880, was 2227 tons 17 cwt., against 1918 tons 9 cwt. and the quantity smelted at the Newcastle Smelting Works during the same period were 6430 tons 9 cwt., against 7502 tons 4 cwt. The quantity of copper made at the Port Adelaide Smelting Works in the same period was 441 tons 6 cwt., against 665 tons 3 cwt., and the quantity of copper made at Newcastle Smelting Works during the same period was 1094 tons 6 cwt., against 1196 tons 8 cwt. The quantity of copper shipped from and sold in Australia during the year ended June 30 last had been—copper shipped from South Australia, 437 tons 17 cwt., against 623 tons 19 cwt.; copper sold in South Australia, 9 tons 5 cwt., against 26 tons; copper shipped from Newcastle, 47 tons 15 cwt., against 213 tons 11 cwt.; copper delivered in Newcastle in return for ore, 1033 tons 12 cwt., against 976 tons 12 cwt.; and copper sold in Newcastle, 18 cwt., against 5 tons. The supplies of ore showed a decrease in the year under consideration of 1380 tons, as compared with the supplies of the previous year. There had been a sensible decrease in the quantity of ore, and the reason of that no doubt was that the copper market had been very low, and the mines had not produced so much as they ought to have done. One point of greatest interest to the shareholders was with respect to the progress which had been made with the railway, and on this point he would read the latest official return relating to the Port Augusta and Government Gums Railway, with the Public Works report to June 30 last—

"That portion of the line between Port Augusta and Quorn, 25 miles from Port Augusta, was completed by the contractors and finally handed over to the Government on Dec. 15, 1879. The first section, 65 miles between Port Augusta and Womoka (Hawker), was completed in April last, and was handed over to the Government by the contractor in May. Beyond this point the earthworks are completed as far as the 115th mile, the bridges and culverts as far as the 92nd mile, and the permanent way laid to the 50th mile. There are now about 300 miles engaged upon this work. Extensive works have been executed in Port Augusta, including the reclamation of land required for station purposes, the extension of the rails from the terminus through Meldred and Tassie Streets, and fencing the station yard."

In their report the directors stated that on Dec. 16 last the railway was publicly opened by the Governor of South Australia, with his suite, accompanied by the Commissioner of Public Works and the Engineer-in-Chief, travelled on the line for about 120 miles in about five hours, excluding stoppages. The line had since been opened a further 20 miles, so that it was opened altogether 140 miles. The whole length of the line was 200 miles, and when it was opened the whole line it would open up a large number of mines. The balance to the credit of profit and loss on June 30 last was 21237. 7s. 11d. The directors had expected that in the second half of the year they would be able to make considerably larger profit, but in consequence of the amount of ores raised being short, and the general expenses upon working the ore having been heavier, the result was that instead of having a larger profit there was a smaller amount to the credit of profit and loss account. The difficulty was increased by a fall in the price of copper. At the last meeting the price of copper was 77. 10s. In July it fell to 68. In August it rose again to 71. Since then it has fallen again, and now stood at 65. This had been of great importance to the company, as upon the price of copper depended the amount of ore they could get. Up to the present time the supply of ore had principally come from the Peninsula and New Caledonia, and they had also sent to New Zealand for ore; in fact, the furnaces would have gone out had not the company obtained ore from those extreme districts. He was happy to say with respect to the Far North that the railway to which he had alluded, and which was to be finished in October next, would run through a mining district very similar to the mining district of Cornwall. There were a large number of mining sets. There were gentlemen who were very much interested in copper matters who had obtained possession of a large number of these mining sets, and a company had been formed for the purpose of working these mines. If those mines were worked, not only would the company's present furnaces be kept in full work at a fair price, but would have to erect a considerable number more furnaces in order to smelt the ores which would be offered. He had been connected with this company a great number of years, and he might be supposed to know something about copper and the copper market. He could only say with regard to the opening of the northern mines, that he believed it would result in great benefit to this company, and would enable it to obtain a large supply of ore sooner or later. He hoped that this would enable them to come before the shareholders at future meetings with larger dividends. (Hear, hear.) He moved the adoption of the report and accounts.—Mr. A. COBBETT seconded the motion.

Mr. HARVEY said that had it not been for the profit on the wharf the company would not have been able to declare a dividend. He thought the position of the company could not be considered satisfactory. Mr. COBBETT said he had been connected with the company from the commencement of the concern, and he thought the present statement of accounts was not satisfactory, inasmuch as a part of the dividend was made from the wharf, and a portion had to be taken from the reserve fund. He asked what agreement had been entered into with the new company? He thought the London office expenses were somewhat high.

A conversation and a discussion ensued.—Mr. ALFRED COBBETT, Mr. SPENCER HERAPATH, and Mr. J. R. FRETHER pointed out that through the opening up of the northern mines there was every prospect of much better days being in store for the company. The Chairman replied to some questions chiefly on matters of detail, and said the directors were doing their very utmost, as they had always done, to improve the position of the company.

The adoption of the report and accounts was put and carried. A dividend of 1s. per share was then declared. The retiring directors, Mr. S. Herapath and Mr. Alfred Corbett, were re-elected, and the auditors were reappointed. Votes of thanks were passed to the Chairman, directors, and Mr. E. Cooke, the manager, and the meeting broke up.

#### WEST MOSTYN COAL AND IRON COMPANY.

The ordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Tuesday.

Col. SHAKEPEAR, A.I.C.E., F.G.S., in the chair. Mr. KEITH asked whether the amount of capital represented at the meeting would enable them to proceed to business?—The CHAIRMAN replied that the Articles provided that five shareholders, holding 1-10th of the capital, should constitute a quorum. A larger number of shareholders were there, and a larger amount of capital was represented.

Mr. JOHN DAVIES (the secretary) read the notice convening the meeting, and the minutes of the preceding ordinary meeting, which were confirmed.

The CHAIRMAN said the policy recommended to the directors two or three years ago, and which was endorsed by the shareholders, had unquestionably been a right one. On July 13, 1873, a circular was issued asking those who had taken debentures to leave their deposits for the purpose of carrying on the business until better times should return. Some of the debenture holders withdrew, but 6507. was left, and with that amount the company had been carried on for 2½ years. Having referred to the fact that in 1879 there were 545 collieries less and 62,000 fewer people employed than in 1875, while, in the meantime, the population had increased, and more coal was required, the Chairman said as times improved they could make much better thing of it. The company was started with an area of 4481 acres, and the maximum dead rent fixed was 25007. a year, merging into royalties of 1-14th and 1-15th of the price of coal at the pit's mouth, partly for 40 and partly for 50 years. They were thus overpowered, and arrangements had been made by which the company retained only 1243 acres of the very best portion of the property, with a dead rent of 3007. a year. If they got their money to recommence work the company would not be called upon to pay that dead rent until they were absolutely a going concern. In 1878, when the cry was pretty general that the coal trade was ruined, it was stated that the company even then could make a 1s. or 1s. 6d. per ton profit, because their coal was not only of exceedingly good quality, but they had exceptional advantages in being close to Liverpool and Holyhead, from which port their coal could easily be shipped to Ireland. With an output of 150,000 tons—12,500 cwt. a year. At the outside the total cost of putting the coal free on board at Birkhead would be 3s. 6d. per ton, and about 1s. 6d. or 2s. per ton less free on board in the Mersey. If the coal were sold at 12s. per ton—that was 2s. per ton less than the present price—there would be a net profit of 2s. 8d. per ton, which upon 150,000 tons would give them an income of 12,5007. at the very least. No doubt the Lancashire collieries could sell at the same price, but there was this difference—that the West Mostyn coal was a good coal for getting up steam—the

Lancashire coal was not. Their shaft was capable of winding 1000 tons a day, and their engines were quite powerful enough for the present, and with the appliances they had the shaft could be unwinded in about a week. He was most anxious to get the colliery connected with the London and North-Western Railway, and to do this they would only have to lay down about 800 yards of line. The engineers had told them that they had 88 feet of workable coal, and that was equal to 109,383,000 tons. Then to the eastward of the present workings they had 963 acres, which no one could touch, which, upon a similar calculation, would give them 85,000,000 tons. They had been considering the question of debentures for some time, and the circular recommended that these should be issued at 10 per cent. interest; but he felt that the debenture holders should have an interest beyond the debentures, and he would make this suggestion—suppose they had 18,7507. of net income, which was a reasonable sum to expect. If they paid 7½ per cent. on 20,0007. of the debentures, that would absorb 15007. Then he would propose that the debentures and preference shares should each take 7 per cent., which would absorb 53207., and then that the debenture holders, preference shareholders, and deferred shareholders should take 5 per cent., which would absorb 53537., making the total sum to be divided 12,5737., and leaving 65777. to be carried to a reserve fund. The debenture holders would get 19½ per cent., the preference shareholders 12 per cent., and the deferred shareholders 5 per cent., merely on an output of 150,0007. Mr. CRAIG, M.P., had told him that the West Mostyn had the most wonderful seam of canal coal in the kingdom, and Mr. Hull, in his well-known book, stated that they had a splendid vein of canal coal about 40 yards down, producing more gas than the Wigan coal. It should also be remembered that there was no other gas coal in North Wales.

Mr. PETER RYLANDS, M.P., remarked that the colliery was admirably suited for the trade demand in the Mersey, in Liverpool, and in Birkenhead, and, as has been stated, they could easily raise canal coal, that would, of course, materially increase the profits of the company. The company was formed at a time when the coal trade, and the debt, rent, and other matters were no doubt arranged on a too expensive basis. These circumstances had, however, now been got rid of, and they were now in a position to work the company very economically, the arrangement now come to between Sir Piers Mostyn and the company being a most favourable one for the company. Having kept the company alive during such trying years he thought that it would be a very unfortunate thing if the property should now go into other hands. He was very largely engaged in the coal trade in other directions, and he thought they were just turning the corner, and that there would be an improvement both in the demand and in the price. He strongly advised the shareholders, in their own interests, to subscribe for debentures, so that the property might be developed as rapidly as possible. (Applause.)

Mr. KIMBER supported this recommendation and moved, "That the directors be authorised to raise money on an issue of debentures, for the purpose of carrying on the undertaking, upon such terms and conditions as they may deem desirable."

Mr. LAYCOCK, in seconding the proposition, remarked that the shareholders were very greatly indebted to the directors for keeping the concern afloat, and for having so successfully made arrangements for putting the property into a position which would enable it to be worked economically.

Mr. KIMBER remarked that the accounts were open to the inspection of all the shareholders, but the Chairman had already stated that the only amount spent in 2½ years had been 7007. Mr. RUSSELL EVANS remarked that in the Articles of Association the directors were empowered to issue debentures or to borrow money without the consent of the shareholders, but they had preferred to consult their fellow proprietors. (Hear, hear.) He strongly supported the proposal to issue debentures, and rather inclined to the payment of interest recommended by the Chairman.

Mr. HENRY BAXTER, the solicitor, thought the complaint of Mr. Keith would be met if the secretary were to send out a statement of the moneys received and expended since the last meeting. (Hear, hear.)

The CHAIRMAN promised that this should be done, and the amendment was then withdrawn.—The resolution was put and carried.

On the motion of Mr. LAYCOCK a cordial vote of thanks was passed to the directors, and the meeting then closed.

#### LLANDEGLA MINING COMPANY.

The annual general meeting of shareholders was held at the company's offices, Coleman-street, on Monday.

Mr. ALFRED THOMAS in the chair. Mr. R. CUMMING (the secretary) read the notice convening the meeting, and the statement of accounts and the agent's report were submitted.

The CHAIRMAN said they had made considerable progress with the development of the mine. The south lode had been found costed and trenced upon—that means that the lode has been sunk upon a few yards from surface simply to prove its width, and ascertain as far as they can its value. A considerable amount of work has been done on the middle lode. The shaft has been sunk to a depth of 50 yards, and levels have been opened to the extent of about 50 fathoms. From what they see of the lode it is very promising. They have got some very fine specimens of ore, and it requires very little sinking of 20 or 30 yards before they discover a very rich and remunerative. Of course, that operation will be carefully carried out. With regard to the north lode, they have a very nice course of ore at a shallow depth, and they have followed it about 21 fms.; it has proved to be so far unusually rich, considering its shallow depth, and from this point—that is, at a depth of 25 yards—they have raised 5 tons of lead. This course of ore as they drive east upon it dips in accordance with the dip of the country, and it becomes larger and more productive. Reference is made to a new lode. That is a lode found near to the northern boundary—near Bodidris Mine. It is a fine lode, and resembles very closely the lode upon which a good discovery has recently been made at Bodidris—that is, the Maes-y-pwll lode. With the view of developing this property they are sinking a shaft in the rock, and will put out a short cross-cut to intersect the lode in about a month or six weeks, and if found productive, as the agent says, it will add materially to the value of the mine. At surface they have done the necessary work, such as erecting a storehouse and offices, and a suitable place for the miners to change in, and they have everything that they want, at any rate for the present.

The report was unanimously adopted. Mr. Arthur was re-elected director, and Mr. F. Wood auditor.

Mr. S. BISHOP said the mine an interesting property. Many points about it recommended themselves to his notice, or else he would not have gone into the concern, for he went in as a practical man, with his eyes open. There is one great advantage, it seems to him, in the property—that is the fact that water will not trouble them.

The CHAIRMAN said that their cost-sheets show that they have not much expense with water, and of course it is a matter of great importance in mining to be able to do without steam pumping machinery. The price of lead must rise in time. They unfortunately cannot control the lead market, but all other metals have gone up, and he thought lead must follow.

The usual complimentary votes terminated the proceedings.

#### GROGWINION LEAD MINING COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Change-alley, on Thursday.

Mr. G. ROSS in the chair. Mr. GEORGE BEDFORD (the secretary) read the notice convening the meeting, and the directors' report and statement of accounts were submitted.

In accordance with the announcement made in the last half-yearly report, the directors have carried out Mr. Kitto's recommendations that the lode below the deep adit level should be developed. This has necessitated the sinking of a new shaft from the top of the hill, about 700 ft. above the river, to a depth of 12 fms. below the deep adit, and the erection of a new pumping wheel and drawing machinery, with all the necessary additions thereto. The erection of this machinery is now nearly complete. The cost of these additional works, as will be seen from the balance-sheet, has absorbed 10997. 8s. 1d. of the ordinary revenue of the company, as well as interfering with the regular working of the mine, so that only five sales of ore have been made during the six months. There have also been seven four-weekly pay-sheets chargeable during the half-year, and a falling off of 17s. 9d. per ton during the same period in the average price of the ore sold; the result being that the profit and loss account shows a loss of 7947. 3s. 1d.

The CHAIRMAN said the engine-shaft and its appliances for pumping and winding will, in the opinion of the directors, well repay the outlay and care spent upon them, as the mine can now be developed to any reasonable depth below the river level, and they believe that ground of much greater value will be opened than any hitherto seen in the mine. These heavy development works have been carried out with greater dispatch and at a smaller cost than was anticipated, and those shareholders who have seen them have expressed themselves as well satisfied, and give the local management credit for skill and perseverance in the carrying out of this important improvement in the property.

The CHAIRMAN said: Gentlemen, before proceeding to comment upon the report that we have to present to you to-day, I may say that last July Mr. Kitto told you he had advised the board that the time had arrived when the systematic development of the lode below the deep adit level must be commenced. We also then told you that we were informed, and believed, that the richest part of the mine existed in this direction—that is, below the bed of the river—and that if we considered the cost that would be involved in its development was excessive we would communicate specially with you. After due consideration, we have not found it necessary to make any special communication to you; for, although our capital account is all but exhausted, we have been able, through the very good management of Mr. Kitto, during the past six months to pay nearly the whole expense of these new works out of revenue. The new works have been very heavy, for we have had to construct and timber a new shaft 128 fms. deep, fix a ladder in it from top to bottom, and put skip-roads for drawing the produce from the deep adit to the 12 ft. level. Besides this, we have had to purchase and fix a new 40-ft. water-wheel, attach it to the drawing machinery, and place a 2-in. iron pump rod for something like 3000 ft. in length. We have also had to put in two drawing machines, and 3300 ft. of wire-rope, for the purpose of lifting the stuff from the level below the deep adit. All these things, together with the fittings and preparations, have been very costly; but, as you have heard in the report, just read, you, they are equal to our requirements for many years to come. Besides this outlay during the past six months, we have had to contend with lower average value of ore ground—the average having been 10 cwt. per fathom, as against 14 cwt. in the preceding six months; and besides this, our ores realised 17s. per ton less. This is for the low general average of the ground, together with the general interruption of all work concerning which I have just spoken. There have been five sales of ore instead of six, and you will see in the accounts seven pay-sheets introduced on the other side. Yet, in spite of all these drawbacks and heavy expenses, our debtors are very small, and a dividend in the value of the ore would quickly liquidate that. We are in the position, in fact, of having earned a dividend,

but spent it on the mine; and such expenditure will undoubtedly be productive of vast good in the future. I think you will agree that we have done what is best for the general interests. I omitted to say that practical opinion in the county has for many years past expressed itself to the effect that the richest deposits in our mine would be found below the bed of the river; but it was not possible to attack them earlier than we have done. Your directors believe the result will be a sterling advantage to the company, and if the lode only holds down for a few levels of the same value as it is at present, we should quickly see our returns increased. Now, gentlemen, the accounts will not require any explanation from me. I have so often gone through the items of capital and revenue, that it is needless on the present occasion to repeat what I have so many times said before. The increase in the labour is due to the additional expenses which I have already mentioned—the extent of ground stoped and driven,—which, as Mr. Kitto's report tells you, is large. With regard to the balance-sheet, I have only to say that our two chief debtors have been paid since the accounts were made up. Our new auditors have gone very minutely into every item, and they have informed me that they are perfectly satisfied with our accounts, and our manner of keeping them. It only remains for me to say that your directors and the manager have greater confidence than ever in the future prosperity of the mine. In conclusion, the Chairman moved the reception and adoption of the report and accounts.

Mr. KIRKLEY seconded the motion. A few questions respecting the details of the working were put, and Mr. KITTO, in the course of his reply, said that with regard to the "enormous improvement" expected below the bed of the river, he could not quite go to the extent of the opinion which prevailed in the county, still he thought he was justified in saying that the mine below the bed of the river would, in all probability, be a far more valuable.

A SHAREHOLDER asked if it was absolutely necessary that a new shaft should be sunk?—Mr. KITTO replied that if the mine was to be properly developed it was absolutely necessary to sink the new shaft. He added that various works had been accomplished which were not specified in the report, as, for example, the widening of the leet, which was now ¾ of a mile in length.

The reports and accounts were then unanimously adopted. The CHAIRMAN said it had been decided to recommend the discontinuance of the half-yearly meetings, as the attendance of shareholders at them was so very small. The board, under the Articles of Association, had power to declare interim dividends, and the shareholders could be called together when necessary. Mr. KIRKLEY proposed a resolution giving effect to this recommendation.

Mr. DUNLOP seconded the proposition, which was carried. The CHAIRMAN proposed the re-election of the retiring directors, Messrs. W. Bowman and Mr. Brookes.—Mr. DUNLOP seconded the proposition, which was carried. Messrs. Good, Daniels, and Co. were reappointed auditors for the ensuing year, and the meeting then closed with the usual compliment to the Chairman and directors.

#### CATHEDRAL MINING COMPANY.

A meeting of shareholders in the New Cathedral Mining Company (Limited), in liquidation, who were favourable to forming a new company on the Cost-book Principle, was held on Monday at Mr. Ashmead's office, 2, Drapers' Gardens.

Mr. JAMES LADY in the chair.

The notice convening the meeting having been read, the CHAIRMAN said that on Feb. 8 the mine and plant were offered publicly for sale by the liquidator. The only offer in the room was 10007., which being under the reserve price no sale was effected. Subsequently, certain gentlemen who were old shareholders had purchased it, and it was at that meeting the wish to form a Cost-book Company, and re-work the property. It was proposed to constitute the company in 6000 shares. All the shareholders in the late company, in liquidation, had been invited to join the new company, and applications had been received for more shares than there were to allot. A first call of 5s. per share it was proposed to make at once. The clearing of the adit levels was being proceeded with, which was expected to take two or three weeks; this done the pumping of the water from the mine would be resumed. He thought they would soon, from their present position, be able to do more, and in a shorter time, than had been done in the past with all that had been spent. He had great faith in the mine, or he should not again have come forward and taken a large interest.

Mr. LETHBRIDGE, director of the late company, remarked that he believed the mine should be a success, but independent of that he felt the mine should be driven and worked as a new company put out on as quickly as possible for the sake of those who had the remains of their relatives yet under water, and every effort made to get them up.

Mr. WADSWORTH said that as long back as 25 years ago, when he was at Redruth, the mine was always looked upon with great favour, but the lease was then in the hands of local men, who wanted too much for it.

After further discussion it was resolved to call the new company the Cathedral Consols Mining Company, not the Hartley Mining Company, as at first suggested. The Cost-book was then formally opened, the rules and regulations discussed and agreed to. Messrs. J. Lady, J. Walton, and W. H. Lethbridge were appointed the committee, and Mr. Edward Ashmead the secretary. A call of 5s. per share was then formally made.

The following report was read at the meeting:—Feb. 19, 1881.—The prospects for future development are far greater than heretofore, as evident from the report of Capt. Jennings, late manager of the then celebrated Tresavean and other mines, as well as the old miners in the district, and on which we should more fully enlarge but for the sad accident which recently occurred. The lode in the engine-shaft at the 60 is 3 ft. wide, intermixed with yellow and grey copper ore. Also both the 60 east and west, just started from shaft, are of the same width and composition. The lode in the 55 east is 4 ft. wide, composed of gossan, intermixed with floukan, a promising lode for the production of copper. We have a 60-in. engine, which is equal to developing the property to a considerable depth.—STEPHEN DAVEY, STEPHEN DAVEY, JUN.

#### EAST POOL MINING COMPANY.

The general meeting of shareholders was held at the mine on Monday.

Mr. G. A. MICHELL in the chair. The usual preliminaries having been disposed of, the accounts were submitted, showing a profit on the three months working of 69637. 1s. 9d., and a balance available for dividend of 79377. 17s. 7d. A dividend of 64007. (17. per share) was declared, and 15377. 17s. 7d. carried forward to next account. The report of the agents, which was considered satisfactory, stated that they had cut the lode in the 200 fm. level cross-cut, and had driven on it about 2 fms. The lode was 7 ft. wide, and was worth for tin 607. per fathom. The committee reported that they had decided to subscribe 107. towards the fund for opposing the renewal of the dynamite patent.

The CHAIRMAN congratulated the adventurers on the excellent results that had been obtained during the last three months in spite of various difficulties, and said he hoped similar results would be secured for many years to come. A great deal of doubt had existed in the minds of some people as to whether they would ever cut the lode, but it had now been cut, and the adventurers had this result now before them. He, however, certainly never had any doubt about the matter, but he admitted that they had cut a better lode than he expected.

Capt. MAYNARD said that the agents were very pleased indeed at having cut the lode. At their last meeting they endeavoured to convince the adventurers that the lode was actually to be met with at the 200, and so far as they were able, they gave their reasons for saying so. But, notwithstanding this, there were some people who were very unbelieving on the matter. The agents had had to listen to what certain parties had been saying about them, such, for instance, as that they were men with no heads, that they had lost their road, and did not know where they were going. But the agents knew perfectly well what they were about, and he believed they had the confidence of the committee in what they were doing, and he was glad to say that the lode which they had now cut was as strong a lode as they had ever cut in East Pool Mine. They had cut it to within a foot of where they expected it, and he believed it would be a good thing for Wheel Agar as well, because he was going in that direction, although it might not be so productive up to the same level.

Capt. BISHOP was glad to find that everybody had confidence in the agents now the lode had been cut. Three months ago they were in a glorious minority, and there were very few who believed in the lode at all. But now the thing was accomplished they were in a glorious majority. Even when the lode was cut at the 200, there were some people who said it was only a dropper, but it was certainly a very big dropper, and he believed they would have many droppings from it.

The CHAIRMAN was glad to say with regard to the mine itself that it never looked so well as at this moment. For a long time past they had been trying to find another market for their wolfram, but for the last five years they had been only selling it in very small quantities, and there had not been any very satisfactory market for it. But they had turned their attention to the probability of rendering it marketable, and had tried it in different ways, and he thought they had now fair reason for hoping that they had at last found a market for it. He had an order at that moment for 25 tons, and he hoped this was but the beginning of a good many other orders of a similar character, and that they would eventually get a substantial credit for their wolfram.

Capt. BISHOP referred in detail to the working of various points in the mine and spoke very confidently of its future success. A statement recently showed that in 1878 Dolcoath paid 42967. in dividends and East Pool only 30407.; in 1879 Dolcoath again paid 42967., whereas East Pool went up to 12,5407., and in 1880 Dolcoath paid 21,4807., and East Pool 27,0007. In the three years the total amount paid by Dolcoath was 30,2327., and East Pool 42,5807., making a difference in favour of East Pool of 12,4487.

The usual complimentary votes terminated the proceedings.

#### UNITED VAN CONSOLS AND GLYN MINING COMPANY.

The report of the directors prepared for presentation at the meeting on Wednesday next states that the revenue account for the half-year, to Nov. 30, shows a debit balance of 16077. 16s. 4d. The work in this half-year as in the last has been mainly of an exploratory character, although ore of paying quantity and quality has been met with at various places. This result was anticipated in the directors' report of July, 1880, and it will be proposed after the adoption of the report and accounts, that the balance be transferred to capital account. Up to May, 1879, in pursuance of the contract dated Oct. 10, 1873, 21,750 new ordinary shares had been allotted to the shareholders in the old Van Consols Company. Only 788 shares have been applied for during the past six months, and it seems as if the estimate of 24,000 shares for this purpose will prove to be largely in excess of the number required. Of the 15,000 preference shares allotted, 212 have been forfeited for non-payment of calls. There are, therefore, 2712 preference shares still unissued. In accordance with their promise to the shareholders generally, and in concert with an influential member connected with Liverpool, the directors appointed Capt. Rich, of South Conduwrow Mine, and Capt. Vercoe, of Prince Patrick Mine, to inspect and report upon the property, giving them free access to all accounts and records at Llandidre. Llandidre.

In concluding a detailed report Capt. William Rich says:—I would recommend



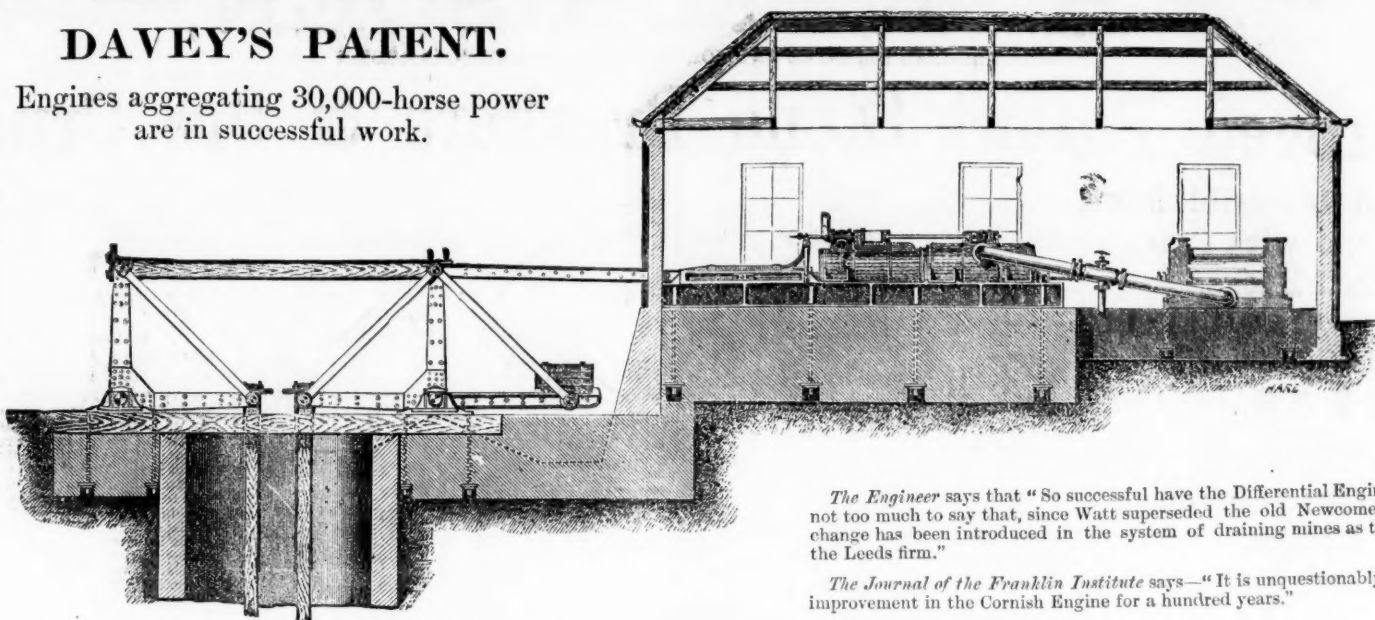
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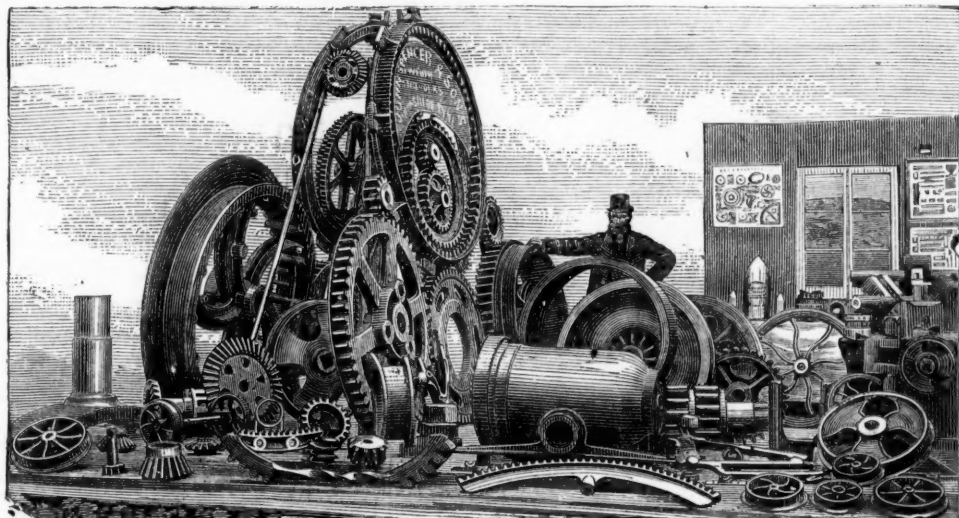
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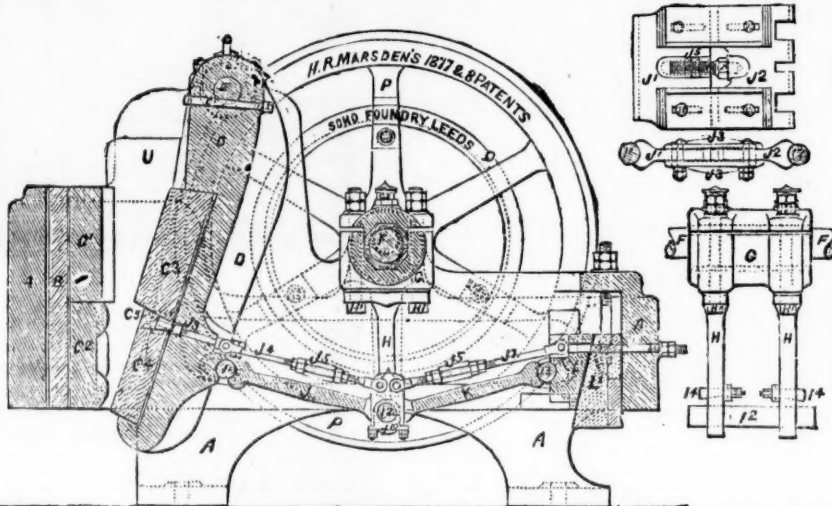
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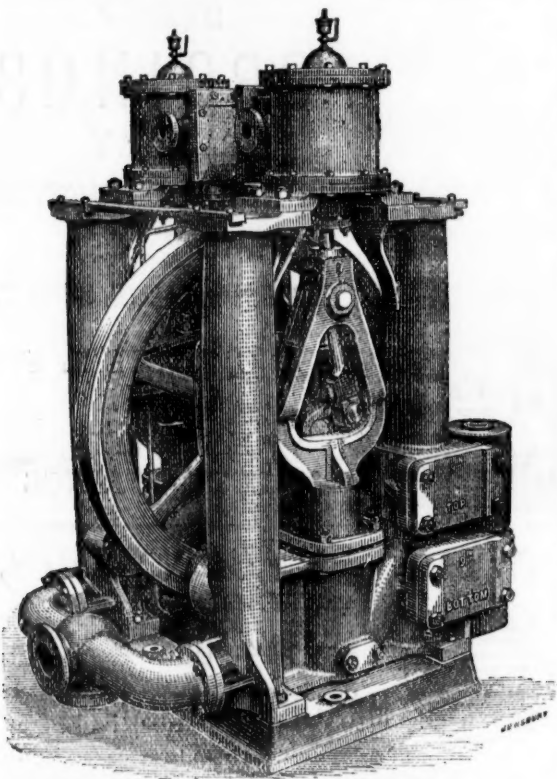


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